

ANPRDI 20 (1-12) 1-632 (1983)

ISSN 0144-557X

Analytical Proceedings

Proceedings of the Analytical Division of
The Royal Society of Chemistry

Volume 20 1983

Published by
THE ROYAL SOCIETY OF CHEMISTRY
BURLINGTON HOUSE, LONDON, W1V 0BN

Analytical Proceedings

**Proceedings of the Analytical Division of
The Royal Society of Chemistry**

Officers of the Analytical Division of The Royal Society of Chemistry

President
S. Greenfield

Hon. Secretary
R. Sawyer

Hon. Treasurer
D. C. M. Squirrell

Hon. Assistant Secretary
D. I. Coomber

Hon. Publicity Secretary
J. F. Tyson

Secretary
Miss P. E. Hutchinson

ANALYTICAL EDITORIAL BOARD

Chairman
J. M. Ottaway

L. S. Bark	J. M. Skinner
G. J. Dicke	J. D. R. Thomas
L. C. Ebdon	A. M. Ure
*G. W. Kirby	*P. C. Weston
A. C. Moffat	J. Whitehead

**Ex officio members*

Editor, Analytical Proceedings
P. C. Weston

Senior Assistant Editors
Mrs. J. Brew, R. A. Young

Assistant Editor
Ms D. Chevin

© The Royal Society of Chemistry, 1983
Printed by Heffers Printers Limited Cambridge England

NAME INDEX

A

Adams, M. J. *See Birnie, R. V.*
Al-Hitti, I. K., Moody, G. J., and Thomas, J. D. R. Ion-selective electrode determination of sulphide produced by sulphate-reducing bacteria, 119.
Al-Jorani, T. K., and Lyle, S. J. Comparative study of some ion detectors for use in flowing liquid streams, 111.
Aughey, E. *See Black, M.*

B

Babiker, M. O., and Dalziel, J. A. W. Studies on the determination of sulphide using *N,N*-diethyl-*p*-phenylenediamine, 609.
Bal, T. S. *See Law, B.*
Bamiro, F. O., Littlejohn, D., Marshall, J., and Ottaway, J. M. Investigation of compromise conditions for inductively coupled plasma emission spectrometry, 602.
Bannister, S. J. *See Sternson, L. A.*
Batham, M. G., and Simpson, C. F. New look at reversed-phase packing materials for liquid chromatography, 618.
Bendell-Young, L. *See Thompson, M.*
Berridge, J. C. High-performance liquid chromatography method development by microcomputer using linear and simplex optimisation, 29.
Best, G. A. Edinburgh—a brief history, 226.
— New member of Council, 395.
Birch, B. J. *See Frend, B. J.*
Birnie, R. V., and Adams, M. J. Development of a spectrometer for monitoring crop reflectance, 519.
Black, M., Ottaway, J. M., Fell, G. S., and Aughey, E. Model for cadmium toxicity, 592.
Blackman, J. A. *See Starr, C.*
Bleazard, R. G. Particle size aspects of cement technology, 529.
Bottomley, P. Chromatographic analysis of hazardous impurities in pesticides, 401.
Brazell, M. P. *See Marsden, C. A.*
Brinkman, U. A. Th. On-line enrichment for enhanced sensitivity in liquid chromatography, 364.
— and Frei, R. W. Selective detection in liquid chromatography through post-column derivatization and fluorescence monitoring, 354.
Brown, R. H. Chromatography as an analytical tool for the occupational hygienist, 399.
Browner, R. F. Award of tenth SAC silver medal, 3.
Bryant, F. J. Obituary, 139, 197.

C

Cais, R. E., Kometani, J. M., and Salzman, N. H. Analysis of the chemical microstructure of copolymers by high-resolution nuclear magnetic resonance spectroscopy, 579.
Carr, G. P. R., and Fish, B. J. Control of impurities in isoniazid tablets, 181.
Carthy, B. J., and Hill, G. T. Some aspects of the analysis and stability of atracurium besylate, 177.
Chapman, A. H. Determination of organotin compounds in waterways and seaways, 210.
Chipperfield, J. R., Roscoe, R. M., and Webster, D. E. A versatile autotitrator using the PET microcomputer, 127.
Chirnside, R. C. Obituary, 139, 349.
Christie, A. B., Sutherland, I., Lee, J., and Walls, J. M. X-ray photoelectron spectroscopic study of ion-induced decomposition in inorganic oxy-salts, 480.
Clarke, J. R. P. Colour monitoring in drains and rivers, 56.
Clifford, M. N., and Ohiokpehai, O. Coffee astringency, 83.
Cluley, H. J. Obituary of R. C. Chirnside, 349.
Cobb, P. H. Automation of physico-chemical methods in a pharmaceutical analytical laboratory, 369.
Coleman, M. M., and Gordon, B. Studies of the degradation of acrylonitrile - acrylamide copolymers, 572.
Cowe, I. A. NIR: past, present and future, 65.
Cowper, C. J. *See Wybrow, B. R.*
Criddle, S. J., and Crook, M. D. Application of electrochemical sensors in the monitoring of coal mine atmospheres, 53.
Crimes, A. A. *See Hitchcock, C. H. S.*
Crook, M. D. *See Criddle, S. J.*
Curran, P. J. Crop radiometry, 517.

D

Dale, A. D. Experiences in high-performance liquid chromatography, 200.
Dalziel, J. A. W. *See Babiker, M. O.*
Daniel, C. P. *See Gaskell, S. J.*
Davidson, J. Pharmaceutical application of high-performance size exclusion chromatography, 171.
Davies, G. J., Tuppen, C. G., Heckingbottom, R., Gill, M., and Heslop, C. AES and XPS studies of polymer films formed during the plasma etching of silicon oxide layers, 478.
Denton, C. L. New member of Council, 396.
DeRose, A. J. *See Wybrow, B. R.*

Diamond, C. A. *See Pierce, T. B.*

Docherty, A. C. New member of Council, 396.

Doyle, W. P. 270 years of chemistry at Edinburgh, 233.

E

Ebdon, L. *See Hobbs, P. J.*

Edmond, J. D. Calibrated volumetric glassware. (Correspondence), 216.

El Hag, I. H., and Townshend, A. Silicon-intensified target camera as a detector for cool flame emission spectra, 135.

Evans, R. Thin-layer activation in the measurement of engine wear, 474.

Evans-Terlecki, E. N. On-site training and purchasing microcomputer systems, 516.

F

Fell, A. F. Computer-aided optical multi-channel detectors in liquid chromatography, 356.

—, **Scott, H. P., Gill, R., and Moffat, A. C.** Pharmaceutical applications of computer-aided optical multi-channel spectroscopy, 173.

— SAC 83. Update courses, 187.

Fell, G. S. *See Black, M.; Sthapit, P. R.*

Finnicar, M. New member of Council, 454.

Fish, B. J. *See Carr, G. P. R.*

Florence, T. M. Electrochemical approaches to metal speciation, 552.

Footman, R., and McIntyre, P. University of Edinburgh, 1583–1983, 229.

Frei, R. W. *See Brinkman, U. A. Th.*

Frend, A. J., Moody, G. J., Thomas, J. D. R., and Birch, B. J. Interference with calcium ion-selective electrodes by anionic surfactants: studies of membrane parameters, 122.

G

Games, D. E. Combined high-performance liquid chromatography - mass spectrometry, 352.

Gaskell, S. J. Quantitative gas chromatography - mass spectrometry for bioanalytical studies, 350.

—, **Daniel, C. P., and Nicholson, R. I.** Gas chromatography - high resolution mass spectrometry in analyses of hormonal and anti-hormonal drugs, 34.

Gerrard, D. L. Application of Raman spectroscopy to the analysis of polymers, 569.

Gifford, L. A. Teaching analytical chemistry students digital electronics and microprocessor fundamentals, 514.

Gill, A. A. *See Starr, C.*

Gill, M. *See Davies, G. J.*

Gill, R. *See Fell, A. F.*

Goddard, C. P. *See Law, B.*

Goldberg, V. *See Ratnaraj, N.*

Gonzalo, R. *See Traveset, J.*

Gordon, B. *See Coleman, M. M.*

Graham, C. L. *See Tovar-Grau, J.*

Greenfield, S. A message from the President of the Division, 223.

— Appointed Industrial Professor at Loughborough University of Technology, 92.

Greenhow, E. J. *See Marrero-Ardila, D.; Wybrow, B. R.*

Griffiths, J. B. Aspects of optical microscopy related to the asbestos industry, 410.

Guilbault, G. G. Immobilised biological and immuno sensors, 550.

H

Hall, P. A. *See Murray, I.*

Hamence, J. H. Obituary of Dr. K. A. Williams, 139.

Hansen, E. H. Flow injection analysis—a new approach to laboratory automation, 486.

Hawickhorst, G. Automatic sample preparation and its role in process control, 431.

Hayes, M. H. B. *See Tovar-Grau, J.*

Headridge, J. B. Determination of ultra-trace elements in nickel alloys using atomic spectrometric methods and solid samples, 207.

Heckingbottom, R. *See Davies, G. J.*

Heslop, C. *See Davies, G. J.*

Hill, G. T. *See Carthy, B. J.*

Hitchcock, C. H. S., and Crimes, A. A. Aspects of ELISA, 413.

Hobbs, P. J., Jones, P., and Ebdon, L. Determination of trace metals by high-performance liquid chromatographic separation and spectrophotometric detection, 613.

Honeybone, A. Automatic analyser for the determination of quinizarin in hydrocarbon oils, 462.

House, M. Automated headspace gas chromatography, 423.

Hubbard, A. R., Miller, J. N., Law, B., Mason, P., and Moffat, A. C. Polarisation fluorimmunoassay for LSD, 606.

Huddleston, J., Hutchinson, I. G., and Pierce, T. B. Application of tomographic techniques to two-dimensional surface analysis using the Harwell nuclear microprobe, 476.

— *See Pierce, T. B.*

Humphreys, I. J. *See Law, B.*

Hutchinson, I. G. *See Huddleston, J.*

J

Japp, M. *See Law, B.*
Johnson, C. A. Eighth Analytical Division Distinguished Service Award conferred on, 89, 196, 350.
Jones, P. *See Hobbs, P. J.*
Joyce, J. R. *See Law, B.*

K

Karube, I., and **Suzuki, S.** Amperometric and related determinations with immobilised enzymes and micro-organisms, 556.
Keenlyside, M., **Stott, F. H.**, and **Wood, G. C.** Depth profiling analysis of practical surfaces, 482.
Kennedy, J. T., and **Svehla, G.** Catalytic micro-determination of the copper content in herbage, 117.
Kenny, L. C. Automated asbestos counting using a magiscan image analyser, 61.
Kheawpintong, S. *See Thorburn Burns, D.*
Kingsbury, R. W. S. M. Hazards and nuisances from waste disposal operations, 8.
Kirkbright, G. F. New member of Council, 454.
 — Sixteenth Society for Analytical Chemistry Gold Medal awarded to, 89, 195.
Kometani, J. M. *See Cais, R. E.*
Kricka, L. J. Sensitive and high resolution analytical techniques in clinical chemistry, 163.
Krull, U. J. *See Thompson, M.*

L

Ladenson, J. H. Ion-selective electrodes in clinical chemistry and medicine, 554.
Lascelles, P. T. *See Ratnaraj, N.*
Lau, C. M., **Ure, A. M.**, and **West, T. S.** Atom trapping atomic-absorption spectrometry, 114.
Law, B., **Joyce, J. R.**, **Bal, T. S.**, **Goddard, C. P.**, **Japp, M.**, and **Humphreys, I. J.** Characterisation and comparison of illicit heroin by gas chromatography and high-performance liquid chromatography, 611.
 — *See Hubbard, A. R.*
Lee, J. *See Christie, A. B.*
Lehrle, R. S. Pyrolysis - gas chromatography for polymer analysis and characterisation and for studying thermal degradation mechanisms, 574.
Leonard, M. A. New member of Council, 396.
Littlejohn, D. *See Bamiro, F. O.*
Long, T. M. Application of near infrared reflectance spectroscopy to tobacco analysis, 69.

— The application of automatic techniques for laboratory and process control, 35.
Lummis, E. Environmental protection and European community legislation, 21.
Lyle, S. J., and **Za'tar, N.** Automated spectrofluorimetric determinations of terbium and dysprosium in rare earth mixtures, 616.
 — *See Al-Jorani, T. K.*
Lyon, W. S., and **Roberts, P. P.** Technical oral presentations: what happens to them? 374.

M

Macdonald, I. A. *See Marsden, C. A.*
Mace, A. W. Sample preparation for continuous flow analysis—some examples and future developments, 427.
Maidment, N. *See Marsden, C. A.*
Marrero-Ardila, D., and **Greenhow, E. J.** The use of catalytic thermometric titrimetry in an investigation of the mechanism and applications of condensation and rearrangement reactions of mono- and difunctional carbonyl compounds, 130.
Marsden, C. A., **Macdonald, I. A.**, **Brazell, M. P.**, and **Maidment, N.** Electrochemical detection of amines and other compounds of pharmacological and neurochemical interest, 559.
Marsh, K. C. *See Sternson, L. A.*
Marshall, J. *See Bamiro, F. O.*
Martin, L. E. *See Tanner, R. J. N.*
Mason, P. *See Hubbard, A. R.*
Mason, P. R. Emission spectrometric analysis of lubricating oil, 471.
Mathias, A. New member of Council, 397.
May, E. M., and **Pearse, J. E.** Stability of pralidoxime mesylate injections, 179.
McIntyre, P. *See Footman, R.*
McLelland, A. S. Data handling and network analysis in the automated clinical laboratory, 27.
McNeill, I. C. Thermal volatilisation analysis of polymers, 576.
McQuillan, J. Detection of firearms discharge residues, 548.
Miller, J. N. Clinical and biochemical applications of flow injection analysis, 487.
 — Plenary lecturer at SAC 83, 234.
 — *See Hubbard, A. R.*
Mitchell, P. G. In-stream analyser for the measurement of trace water in petroleum products, 464.
Moffat, A. C. *See Fell, A. F.*; *Hubbard, A. R.*
Moody, G. J., **Thomas, J. D. R.**, and **Yarmo, M. A.** Mechanism of metal sorption from aqueous potassium thiocyanate by polyether type polyurethane foam, 132.

— *See Al-Hitti, I. K.; Frend, A. J.*

Morries, P. New member of Council, 454.

Murray, I., and Hall, P. A. Animal feed evaluation by use of near infrared reflectance (NIR) spectrocomputer, 75.

N

Nicholson, R. I. *See Gaskell, S. J.*

Novotny, M. V. Plenary lecturer at SAC 83, 235.

Nutt, A. Determination of isocyanates using a paper tape monitor, 63.

O

O'Haver, T. C. Plenary lecturer at SAC 83, 236.

Ohiokpehai, O. *See Clifford, M. N.*

Osborne, B. G. Applications of NIR in the baking industry, 79.

Ottaway, J. M. Appointed to a Personal Chair at University of Strathclyde, 92.

— Multi-element analysis. (Editorial), 193.

— SAC 83 (Editorial), 1, 224.

— *See Bamiro, F. O.; Black, M.; Sthapit, P. R.*

Oxford, J. *See Tanner, R. J. N.*

P

Parkin, J. Use of robots in automated sample preparation systems, 422.

Pearse, J. E. *See May, E. M.*

Petersen, P. J. Arsenic in the biosphere: an illustrated discussion of risk assessment, 399.

Pierce, T. B., Huddleston, J., and Diamond, C. A. Investigation into the use of low-cost robots to support chemical analysis, 419.

— *See Huddleston, J.*

Porter, D. G. Microcomputing: a consumer's view of training requirements, 511.

Preston, M. A. Application of high-performance liquid chromatography to the analysis of marine systems, 455.

Pugh, K. B. Analytical aspects of water pollution control, 17.

Pungor, E., and Tóth, K. Flow analysis with electrochemical detection, 652.

Purdue, G. E. Applications of X-ray fluorescence spectroscopy in the petroleum industry in relation to petroleum products and additives, 467.

— Automated X-ray fluorescence spectroscopic analysis of metals, catalysts and other grindable solids in the energy industry, 433.

Purnell, J. H. Recipient of 1982 RSC sponsored award, 499.

R

Ratnaraj, N., Goldberg, V., and Lascelles, P. T. Radioreceptor binding assay—a new biological method for the determination of drugs in body fluids, 169.

Repta, A. J. *See Sternson, L. A.*

Richards, W. N. Water supply and analysis of contaminants—the impact of the EEC, 14.

Roberts, P. P. *See Lyon, W. S.*

Robins, G. V. Analysis of archaeo-organic residues, 379.

Robinson, H. Problems of leachate from domestic waste tips, 11.

Roscoe, R. M. *See Chipperfield, J. R.*

Rose, D. A. Preliminary investigations with a commercial hydride generation/ICP - OES system, 436.

Rowe, B. C. The external integrating sphere—a novel tool for surface colour measurement, 205.

S

Salzman, N. H. *See Cais, R. E.*

Sarkissian, L. L. *See Wan Ngah, W. S.*

Schill, G. Detection in reversed-phase liquid chromatography by use of ion-pairing probes, 359.

Scott, H. P. *See Fell, A. F.*

Shaw, A. Instrumentation for flow injection analysis, 488.

Shenton, F. C. Legal and scientific control of food, 6.

Simon, W. Plenary lecturer at SAC 83, 237.

Simpson, C. F. *See Batham, M. G.*

Simpson, D. Some unusual and difficult samples in analytical general practice, 381.

— Use of the microscope in a consultancy laboratory, 409.

Smith, D. B. *See Starr, C.*

Smith, R. M. Graphical representation of spectroscopic data, 32.

Smith, R. N. Radioimmunoassay in forensic science, 417.

Snook, R. D. First biennial national atomic spectroscopy symposium, 51.

Soutar, I. The application of luminescence techniques to the analysis of oil spills, 19.

Starr, C., Smith, D. B., Blackman, J. A., and Gill, A. A. Applications of near infrared reflectance analysis in breeding wheats for bread-making quality, 72.

Stavrou, A. Some considerations of the analytical aspects of drug - diet mixtures used in toxicology studies, 202.

Sternson, L. A., Marsh, K. C., Bannister, S. J., and Repta, A. J. Detection systems for assay of antineoplastic platinum complexes, 366.

Steven, M. D. Physical and physiological interpretation of infrared to red spectral ratios over crops, 527.

Sthapit, P. R., Ottaway, J. M., and Fell, G. S. Determination of lead in blood, urine and water by flame atomic-fluorescence spectrometry, 599.

Stott, F. H. *See* Keenlyside, M.

Such, V. *See* Traveset, J.

Sutherland, I. *See* Christie, A. B.

Suzuki, S. *See* Karube, I.

Svehla, G. *See* Kennedy, J. T.

T

Tanner, R. J. N., Martin, L. E., and Oxford, J. An automated GC - MS assay for salbutamol in plasma, 38.

Taylor, B. J. Successive generation studies on cannabis, 546.

Thomas, J. D. R. Analytical chemistry today: analytical chemists tomorrow. (Editorial), 101.

— New member of Council, 398.

— The changing scene in electrochemical analysis, 565.

Thomas, J. D. R. *See* Al-Hitti, I. K.; Frend, A. J.; Moody, G. J.

Thompson, M., Krull, U. J., and Bendell-Young, L. Biosensors and their uses in flow injection systems, 568.

Thornburn Burns, D. Inorganic and analytical chemistry in the "A" level syllabus, 377.

— Recipient of 1982 RSC sponsored award, 499.

— Retrospective view of SAC 83, 509.

— and Kheawpintong, S. Role of propylene carbonate, a non-inert solvent, in the extraction of the tetrathiocyanatocobaltate(II) ion, 595.

— Training of the pharmaceutical analyst: discussion of the necessary training and routes to the "qualified person" status, 405.

Tóth, K. *See* Pungor, E.

Tovar-Grau, J., Graham, C. L., and Hayes, M. H. B. Analytical aspects of copper binding by humic substances in reservoir sediments, 125.

Townshend, A. SAC research studentships—the first decade, 453.

— Trace analysis using flow injection with chemiluminescence monitoring, 487.

— *See* El Hag, I. H.

Tranter, R. L. Automated sample processing, 425.

Traveset, J., Such, V., and Gonzalo, R. Derivative transformation of spectrophotodensitometric profiles in high-performance thin-layer chromatography, 362.

Tuppen, C. G. *See* Davies, G. J.

Tyson, J. F. Flow injection methods and atomic-absorption spectrometry, 488.

— Getting the message across—why bother? A guide to how not to present your paper at SAC 83. (Editorial), 159.

— Honorary Publicity Secretary's column, 2, 342.

— *See* Wan Ngah, W. S.

U

Ure, A. M. *See* Lau, C. M.

Usher, C. D. Organisation and reporting of analytical work, 24.

V

van den Berg, C. M. G. Trace metal speciation in sea water, 458.

Vickerman, J. C. Static secondary ion mass spectrometry (SIMS) and fast atom bombardment mass spectrometry (FABMS) for surface analysis, 482.

W

Wade, A. P. Computer assisted optimisation of chemical systems, in particular flow injection analysis, 108.

— Optimisation of flow injection analysis and polarography by the modified simplex method, 523.

Walker, D. Dissolution by automatic sequential sampling and analysis, 429.

Walls, J. M. *See* Christie, A. B.

Wan Ngah, W. S., Sarkissian, L. L., and Tyson, J. F. Comparison of electrothermal atomisation methods for molybdenum, 597.

Webster, D. E. *See* Chipperfield, J. R.

Weeks, I., and Woodhead, J. S. Immunoassays using chemiluminescence labelled antibodies, 416.

West, T. S. Appointed as Secretary-General of IUPAC, 545.

— *See* Lau, C. M.

Whitley, J. E. SAC 83 schools lectures, 591.

Whittle, P. J. The use of HRGC in water quality control, 400.

Williams, K. A. Obituary, 139.

Wilson, D. W. Awarded title of Emeritus Professor by the City of London Polytechnic, 93.

Wilson, T. R. S. A microcomputer-controlled alkalinity titration—methods and results, 460.

Wood, G. C. *See Keenlyside, M.*

Woodhead, J. S. *See Weeks, I.*

Worsfold, P. J. Enzymatic assays using flow injection analysis, 486.

Wybrow, B. R., DeRose, A. J., Cowper, C. J., and Greenhow, E. J. Microcomputer-controlled system for automating and improving accuracy and precision in the gas-chromatographic analysis of gases, 102.

Y

Yarmo, M. A. *See Moody, G. J.*

Z

Za'tar, N. *See Lyle, S. J.*

SAC 83

A

Abdalla, M. A. *See Fogg, A. G.*

Abdennabi, A. M. S., and Raashid, M. A new mark-space bias unit for differential electrolytic potentiometry, 314.

Abeed, F. A., and Bishop, E. The electrochemical behaviour of iron(III) - iron(II) in dimethyl sulphoxide (DMSO) and dimethylformamide (DMF), 315.

Adams, F. Advances in inorganic mass spectrometry, 287.

— *See Aggarwal, S. K.*

Adediran, G. O., and Bark, L. S. Determination of organic nitro compounds by solution thermochemistry, 318.

Adams, M. J. The analysis of overlapping spectral absorption bands with the aid of a microcomputer, 277.

Adriaenssens, E. *See Aggarwal, S. K.*

Adshead, A., Kirkbright, G. F., Miller, R. M., Rzadkiewicz, A., and Spillane, D. E. M. Thermal wave imaging instrumentation and applications, 270.

Aggarwal, S. K., Adams, F., and Adriaenssens, E. Determination of trace constituents in high purity germanium tetrachloride by spark source mass spectrometry, 295.

Aggett, P. J. *See Crofton, R. W.*

Aitchison, I. E. *See Fell, A. F.*

Alcock, N. J., and Games, D. E. Liquid chromatography - mass spectrometry of natural products, 270.

Al-Daher, I. M., and Kratochvil, B. Effect of temperature on the speed and number of electrons in reduction of aromatic nitro compounds with colorimetrically generated chromium(II), 314.

Alexander, P. H. V., Moody, G. J., and Thomas, J. D. R. Metal - polyalkoxylate complexes in electrochemical and other analytical procedures, 274.

Alfassi, Z. B., and Lavi, N. Determination of bromine in biological samples by epithermal neutron activation followed by gamma and X-ray spectrometry, 273.

Ali, M. F. Separation and selective identification of nitrogen compounds in high-boiling distillates from Arab crude oils, 305.

Al-Kenani, A. T., East, B. W., Harris, I. A., and Watt, D. E. Minor and trace element analysis of gallstones, 272.

Alsaadi, B. M., and Kadhum, K. H. Determination of mercury using 2-mercaptopbenzoic acid, 301.

Al-Sammerrai, D., and Said, E. Z. Analysis of lubricating greases by far-infrared spectroscopy, 310.

Amankwa, L. *See Chatten, L. G.*

Andersen, J. R., and Gammelgaard, B. Electrochemical determination of nickel in beverages, 317.

— *and Jons, O.* Electrothermal atomic spectrophotometric monitoring of aluminium in blood plasma, 322.

Andrews, K. S. *See Berridge, J. C.*

Anthemidis, A. N. *See Stratis, J. A.*

Antonijevic, M. *See Pastor, T.*

Appleton, J. M. H. *See Tyson, J. F.*

Armstrong, R. D., Covington, A. K., and Evans, G. P. Mechanistic studies of the valinomycin-based potassium-selective electrode using a.c. impedance studies, 274.

Asea, P. E. A., and Leonard, M. A. Photometric titration of fluoride with zirconyl chloride using the Brinkmann Probe absorptiometer, 310.

Aspinall, J. E., Duffy, T. D., and Taylor, C. G. An HPLC method for studying the sorption of phenyl mercurials in polythene, 306.

Asuero, A. G., Navas, M. J., and Trillo, J. L. Study of acetyl-, benzoyl- and salicylhydrazones derived from glyoxal, methylglyoxal, biacetyl and biacetylmonoxime as analytical reagents, 302.

Automatic Methods Group (Discussion Session).
 Microcomputer networks, 278.
Ayodele, J. T. See Cooksey, B. G.

B

Bacon, J. R. Spark source mass spectrometry of agricultural samples, 295.
Bahreyni-Toosi, M. H. See Chilvers, D. C.
Baker, S. J., and Townshend, A. The development of piezoelectric crystal detectors for aromatic and other organic compounds in air, 265.
Bamiro, F. O. See Marshall, J.
Bancroft, K. C. C. See Haswell, S. J.
Barber, M. See Broad, L. A.
Barbooti, M. M. See Jasim, F.
Bardalaye, P. C., and Wheeler, W. B. Improved derivatisation method for gas - liquid chromatographic determination of the herbicide oryzalin, 306.
Bark, L. S., and Garba, A. Determination of alkyl lead in petroleum by direct injection enthalpimetry, 318.
 — Determination of organic compounds by solution thermochemistry, 270.
 — See Adediran, G. O.
Barnett, N. W., Chen, L. S., Greenway, G., and Kirkbright, G. F. Some recent studies using microwave plasma detection for inorganic and organic speciation trace analysis, 291.
 — See Greenfield, S.
Bateson, S. W., Moody, G. J., Thomas, J. D. R., and Murtagh, D. The ZX81 as a potentiometric analyser, 260.
Baumhoer, G. See Neidhart, B.
Baveja, A. K. See Chaube, A.
Belarra, M. A. See Castillo, J. R.
Belchamber, R. M., Betteridge, D., Chow, Y. T., Cudby, M. E. A., Joslin, M., Lilley, T., and Wood, D. G. M. Analytical applications of acoustic emissions and pattern recognition, or, making sense of squeaky molecules, 278.
Bendito, D. P., Valcarcel, M., Silva, M., and Moreno, A. Fluorimetric semi-automatic catalytic titrations: a new instrumental approach, 325.
Berg, H., Olsen, H., Pedersen, E., and Schulz, J. GC - MS studies of volatile organic emissions from industrial rubber vulcanisation processes, 306.
Bernth, N., and Vendelbo, K. Interferences from lead, copper and silver in the determination of mercury in fly ash matrices by cold-vapour atomic-absorption spectrometry, 298.

Berridge, J. C. Automated multi-parameter optimisation of HPLC separations using the sequential simplex procedure, 278.
 — and Andrews, K. S. Variable time-constant differentiation in chromatography, 305.
Betteridge, D., and Chalmers, R. A. Analytical science—how much chemistry should be taught? 269.
 —, Taylor, A. F., and Wade, A. P. Getting the most out of flow injection analysis, 264.
 — See Belchamber, R. M.
Beynon, J. H. New forms of mass spectrometer for analytical work, 269.
Bilgicer, K. See Sherman, L. R.
Bishop, E., and Hussein, W. Electroanalytical studies on phenothiazine neuroleptics at gold and platinum electrodes, 275.
 — See Abed, F. A.; Greenfield, S.
Black, M. M. See Ottaway, J. M.
Boorn, A. See Dugdale, O.
Bordoli, R. S. See Broad, L. A.
Boskovic, G. C. See Putanov, P. S.
Bosnjak, N., and Trinajstic, N. Application of topological indices to gas chromatographic data: calculation of the retention indices of alkanes and cycloalkanes, 309.
Bottari, E., and Porto, R. Acid dissociation of glycerine, 319.
Bowen, D. V., Skett, P. W., Thorpe, J., and Plunkett, A. O. Electron transfer reactions in the chemical ionisation mass spectra of nitrogen ylides, 296.
 — See Broad, L. A.
Breyer, Ph., and Gilbert, B. Determination of sub-nanogram amounts of selenium by differential-pulse polarography of 3,3'-diaminobenzidine piazselenol, 317.
Broad, L. A., Bowen, D. V., Kinnis, M., Norris, T., Barber, M., Bordoli, R. S., Elliott, G. J., Sedgwick, R. D., and Tyler, A. N. Mass spectra of disodium pamoate and an isomer by electron ionisation (EI), chemical ionisation (CI) and fast atom bombardment (FAB) ionisation, 296.
Brookes, B. I. Comprehensive sampling techniques and GC - MS analyses for volatile organic compounds in air, 263.
Brown, R. H. Development of a diffusive sampler evaluation protocol, 267.
Buldini, P. L., Ferri, D., Pauluzzi, E., and Zambianchi, E. M. Determination of the stoichiometry of uranium dioxide by differential pulse polarography, 314.
Burns, E. A., Colby, B. N., and Lagus, P. L. A portable automated analyzer for poly-chlorinated biphenyl mixtures, 266.
Burrell, J. A. See Crews, H. M.

Byrne, A. R., Dermelj, M., and Tusek-Znidaric, M. A study of the determination of iodine in biological fluids by radiochemical neutron activation analysis using an iodinated resin column, 273.

C

Cabrera-Martin, A. See **Martinez-Izquierdo, M. E.**

Cacho, J., and Nerin, C. Indirect determination of alkaloids and drugs by atomic-absorption spectroscopy, 298.

Calatayud, J. M., and Falco, P. C. Synthesis and analytical properties of 2-sulphoethyl imidodarbonimidic diamide, 301.

Calokerinos, A. C., and Hadjioannou, T. P. Determination of inorganic phosphorus compounds using molecular emission cavity analysis, 312.

Campbell, W. C. See **Cooksey, B. G.**

Cano-Pavon, J. M. See **Vazquez Ruiz, J.**

Cantle, J. E. See **Shaw, C. J.**

Carpenter, R. Inductively coupled plasma-optical emission spectrometry (ICP - OES) in forensic science—the analysis of small samples of brasses, 285.

Castillo, J. R., Martinez, C., and Belarra, M. A. Hydride generation - atomic absorption spectroscopy of antimony(III) and -(V), 296.

Cejas, M. A. See **Valcarcel, M.**

Cernak, J. Radical anion formation in the electrochemical reduction in aprotic media of three substituted ethylenes, 318.

Chalmers, R. A. See **Betteridge, D.**

Chamsi, A. Y. See **Fogg, A. G.**

Chatten, L. G., Amankwa, L., and Pons, B. S. Electrochemical analysis of zomepirac sodium, 276.

Chabe, A., Baveja, A. K., and Gupta, V. K. Toxicity and spectrophotometric determination of sulphur dioxide in air using a new absorbing reagent, 320.

Chen, L. S. See **Barnett, N. W.**

Chen, Y. J. See **Wang, W. N.**

Cheng, H.-Y. See **Falat, L.**

Chilvers, D. C., Bahreyni-Toosi, M. H., Dawson, J. B., and Hodgkinson, A. Further studies on the use of DEAE-sepharose Cl-6B for trace element speciation in human plasma, 264.

Chow, Y. T. See **Belchamber, R. M.**

Ciric, I. See **Pastor, T.**

Ciszewski, A. See **Lukaszewski, Z.**

Clapham, M. See **Crofton, R. W.**

Clark, B. J. See **Fell, A. F.**

Clarkson, A. S. A monitor for determining hydrogen fluoride in air, 267.

Coetzee, C. J. A liquid-membrane electrode for the potentiometric determination of thallium(I) ions, 276.

Colby, B. N. See **Burns, E. A.**

Coles, L. E. The developing role of the enforcement analyst, 262.

Cooke, M. Metal carbonyls in tobacco smoke, 267.

Cooksey, B. G., Ottaway, J. M., Ayodele, J. T., and Campbell, W. C. Automatic spectrophotometric titrimetry, 259.

— **Ottaway, J. M., Hall, D., and McDonald, L.** Development of software for automatic spectrophotometric titrations with ancillary indication, 278.

Cope, M. J., Zang, L. X., Kirkbright, G. F., and Taobi, A. An automated sample introduction system for inductively coupled plasma emission spectroscopy of solid samples, 286.

Cornides, I. See **Viezman, M.**

Covington, A. K., and Sibbald, A. Microelectronic chemical sensitive devices (ChemFETS) using neutral carriers, 275.

— **See Armstrong, R. D.**

Cox, A. G. See **McLeod, C. W.**

Cresser, M. S., and Livesey, N. T. The combined use of photoacoustic spectroscopy and DTA in mineralogical analysis, 271.

Creten, W. L. See **Nagels, J. J.**

Crews, H. M., Burrell, J. A., and McWeeny, D. J. Preliminary enzymolysis studies on trace element extractability from food, 262.

Crofton, R. W., Clapham, M., Humphries, W. R., Aggett, P. J., and Mills, C. F. Comparative aspects of plasma, leucocyte and tissue zinc concentrations in zinc deficient pigs, 272.

Crosby, N. T. Undesirable substances and additives in animal feedingstuffs, 263.

Cudby, M. E. A. See **Belchamber, R. M.**

Culklin, H. See **Redant, G.**

D

Danielsson, L. G., and Nord, L. Sample workup for atomic-absorption spectrometry using flow injection extraction, 298.

Date, A. R., and Gray, A. L. Applications of plasma source mass spectrometry, 294.

Dawson, J. B. See **Chilvers, D. C.**

de Broe, M. See **Verbueken, A.**

de Galan, L. See **de Loos-Vollebregt, M. T. C.; Ripson, P. A. M.**

de Lima, C. G., and Pastore, T. C. M. An analytical investigation of some fluorogenic reactions of indol-3-yl acids with orthophthalaldehyde, 325.

de Loos-Vollebregt, M. T. C., and de Galan, L. Electrothermal atomisation in a glassy carbon furnace, 299.

Dermelj, M. *See* **Byrne, A. R.**

Desimoni, E. *See* **Sabbatini, L.**

Deutschmann, P. *See* **Neidhart, B.**

de Vet, H. A. *See* **Lingeman, H.**

Dimitrov, M. A. *See* **Tcholakova, I. F.**

Dobricic, M. *See* **Pastor, T.**

Duff, K. M., Matheson, W., and Sharp, B. L. The design of nebulizers and spray chambers for ICP - OES, 261.

Duffy, T. D. *See* **Aspinall, J. E.**

Dugdale, O., Boorn, A., Zander, A., and Karlinski, T. Fast sequential high-resolution plasma emission spectrometer, 298.

Dumasia, M. C. *See* **Houghton, E.**

Dungs, K., and Neidhart, B. Analysis of urine samples by ETAAS: a comparison of natural and reference materials, 273.

Durand-Alegria, J. S. *See* **Martinez-Izquierdo, M. E.**

E

East, B. W. *See* **Al-Kenani, A. T.; Preston, T.**

Ebdon, L. The introduction of solid samples into an inductively coupled plasma, 286.

— The state of the art of coupled chromatography - atomic spectroscopy, 284.

— *See* **Greenfield, S.**

Edmonds, T. E. Carbon fibre microfaradaic electrodes, 261.

El-Dissouky, A. *See* **Masoud, M. S.**

Elejalde, C. Application of multivariate statistical methods to the study of plants' environmental pollution at Biscay (Spain), 323.

El-Hag, I., and Townshend, A. Automated determination of phosphorus in detergents and rocks by molecular emission cavity analysis, 284.

Elliott, G. J. *See* **Broad, L. A.**

Ellis, A. T. Simultaneous trace multi-element analysis using energy dispersive XRF spectrometry, 319.

Eshwar, M. C. *See* **Gaokar, U. G.**

Essiet, E. U. *See* **Singh, K.**

Evans, G. P. *See* **Armstrong, R. D.**

Evans, R. A. The consequences for public analysts of developments in meat technology, 263.

F

Fagoaga Caridad, P. *See* **Martinez Calatayud, J.**

Faizullah, A. T., Townshend, A., and Wheatley, A. R. Inorganic trace analysis using flow injection and chemiluminescence detection, 313.

Falat, L., and Cheng, H.-Y. Current progress in *in vivo* electrochemical monitoring, 282.

Falco, P. C. *See* **Calatayud, J. M.**

Fang, J. H. *See* **Starks, T. H.**

Farmer, J. G. *See* **Lovell, M. A.**

Farroha, S. M., Habboush, A. E., and Ishaq, N. Accuracy and reproducibility of potentiometric determination of trace amounts of lead as organic lead compounds, 290.

— *See* **Habboush, A. E.**

Farthing, R. H., and Needleman, M. Lead levels in deciduous teeth of Victorian children, 272.

Fell, A. F., Clark, B. J., Aitchison, I. E., Pattie, D. M. G., Williams, M. H., and Miller, J. N. Biomedical applications of computer-aided spectrofluorimetry, 263.

— Novel strategies for detection in high-performance liquid chromatography for biomedical applications, 282.

Fell, G. S. Essential and toxic inorganic elements, 279.

— *See* **Ottaway, J. M.**

Ferri, D. *See* **Baldini, P. L.**

Fleck, A. *See* **Sampson, B.**

Fogg, A. G., Chamsi, A. Y., and Summan, A. M. Flow injection voltammetry, 261.

— **Abdalla, M. A., Summan, A. M., and Martin, M. J.** New methods of determining beta-lactam antibiotics and monitoring their degradation, 312.

Franko, M. *See* **Kosta, L.**

Frenzel, W. *See* **Schulze, G.**

G

Games, D. E. Microbore liquid chromatography and its applications in liquid chromatography - mass spectrometry, 268.

— *See* **Alcock, N. J.**

Gammelgaard, B. *See* **Andersen, J. R.**

Gaokar, U. G., and Eshwar, M. C. Rapid spectrophotometric determinations with some thiazolylazo dyes, 302.

Garba, A. *See* **Bark, L. S.**

Garcia De Torres, A. *See* **Vazquez Ruiz, J.**

Garcia Sanchez, F., Navas, A., and Laserna, J. J. Spectrophotometric kinetic study of the coupling of redox and complexation phenomena and its analytical applications, 311.

Gaskell, S. J. Quantitative analyses of natural and synthetic hormones using capillary gas chromatography - mass spectrometry, 269.

Gharib, A., Rahimi, H., and Payrovan, H. The study of trace elements in milk by nuclear analytical techniques, 324.

Gijbels, R. *See* **Michiels, E.; Verlinden, J.; Viczian, M.**

Gilbert, B. *See* Breyer, Ph.

Giri, S. K. *See* Ottaway, J. M.

Gomez Ariza, J. L., **Marquez Gonzalez, M. L.**, and **Montana Gonzales, M. T.** Salicylaldehyde oxalic acid dihydrazone as an analytical spectrophotometric and fluorimetric reagent. I. Study of the metal reactivity and application to the determination of aluminium, 310.

Gomez-Hens, A. *See* Valcarcel, M.

Gorog, S., and **Lauko, A.** Analytical studies with methylsulphinylmethide carbanion, 301.

Gramlich, J. W. *See* Moody, J. R.

Gray, A. L. Plasma source mass spectrometry—a promising new hybrid technique, 288.
— *See* Date, A. R.

Greenfield, S., **Bishop, E.**, **Ebdon, L.**, **Smith, P.**, **Barnett, N.**, **Squirrel, D.**, **Watson, C.**, **Westwell, A.**, and **Wilson, J.** Atomic absorption spectrophotometers. Part 1—Flame, 300.
— Recent applications of the inductively coupled plasma, 285.

Greenway, G. *See* Barnett, N. W.

Grime, J. K., **Staab, R. A.**, and **Wernery, J. D.** The introduction of analytical calorimetry/enthalpimetry into an industrial research laboratory, 271.

Gupta, V. K. *See* Chaube, A.

H

Haapakka, K. *See* Stephens, R.

Habboush, A. E., **Farroha, S. M.**, and **Mahmood, M. B. H.** Relation between the retention behaviour and structure of furan, pyrrole, thiophene and their monosubstituted derivatives, 305.
— *See* Farroha, S. M.

Hack, C. *See* Marais, P. J. J. G.

Hadjiloannou, T. P. *See* Calokerinos, A. C.

Haldna, U., **Klaos, E.**, **Talkop, R.**, and **Odinets, V.** Rapid method for the atomic-absorption determination of vanadium, molybdenum, copper, cobalt and nickel in argillites, 297.

Hall, D. *See* Cooksey, B. G.

Halls, D. J. Speeding up determinations by electrothermal atomic absorption spectrometry, 287.

Hansen, E. H., and **Ruzicka, J.** Recent advances in FIA: zone penetration and high sensitivity measurements, 265.
— *See* Ruzicka, J.

Hansen, S. H. *See* Helboe, P.

Harnly, J. M. Simultaneous multi-element atomic-absorption spectrometry using electrothermal atomization, 286.

Harriott, M. *See* Thorburn Burns, D.

Harris, I. A. *See* Al-Kenani, A. T.

I

Harrison, W. W., and **Savickas, P. J.** A pulsed glow discharge as an atomisation/ionisation source for elemental analysis, 289.

Hartmann, E. *See* Thompson, J. M.

Haswell, S. J., **O'Neill, P.**, and **Bancroft, K. C. C.** Development of an HPLC - GFAA spectrometer interface, for the study of organo-copper complexes in soil pore waters, 299.

Helboe, P., **Hansen, S. H.**, and **Lund, U.** New possibilities in reversed-phase liquid chromatography by the use of HPLC on dynamically modified silica, 309.

Helsen, J. A., and **Vrebos, B.** Multi-phase solids and the relation intensity - concentration in XRF analysis, a Monte Carlo simulation, 291.

Hershcovitz, H., and **Schmuckler, G.** Efficiency of aromatic compounds as eluents in the chromatographic separation of ions, 293.

Heumann, K. G. Negative thermal ionisation technique as a tool for isotope dilution mass spectrometry of non-metals, 289.

Hiltunen, L., **Ylinen, P.**, and **Ingman, F.** Determination of palladium in pharmaceutical samples by spark source mass spectrometry, 295.

Hitchman, M. L., **Southway, C.**, and **Walkden, P. J.** Chronoamperometric measurements of dissolved oxygen, 289.

Hodgkinson, A. *See* Chilvers, D. C.

Hong, Z. Models for evaluation of analytical methods, 303.

Horlick, G. Developments in spectrochemical measurement systems for the inductively coupled plasma, 290.
— The role of microcomputers and microcomputer sub-systems in laboratory instrumentation, 276.

Houghton, E., **Dumasia, M. C.**, and **Teale, P.** Capillary column GC - MS analysis of urinary metabolites of anabolic and corticosteroids in the horse, 268.

Hulshoff, A. *See* Lingeman, H.; *van der Houwen, O. A. G. J.*

Humphries, W. R. *See* Crofton, R. W.

Hussein, W. *See* Bishop, E.

Hutchings, M. J., **Moody, G. J.**, and **Thomas, J. D. R.** Polarography of metal complexes of imidazole and related ligands, 314.

Ishaq, N. *See Farroha, S. M.*
Ishibashi, N. *See Imasaka, T.*

J

Jackson, C. J., and **Neuberger, C.** Automated ion chromatographic analysis of gaseous and particulate fluoride emissions from aluminium smelters and brickwork stacks, 266.
Jackson, P. Novel sampling and support media for the infrared examination of immiscible oil-based environmental pollutants, 320.
 — Variations on a theme—a series of useful adaptations in the field of automated colorimetric analysis, 312.
Jain, N. C. Non-aqueous titrations of metal chlorides: interactions of tin(IV), alkyltin(IV) and tin(II) chlorides with alkali alkoxides (alkali aluminium alkoxides), 302.
Jasim, F., and **Barbooti, M. M.** Thermoanalytical studies of manganese(II)-, copper(II)- and zinc(II)-nitrosodicyanomethanide tetracyanoplatinum complexes, 318.
Jennings, V. J., and **Morgan, J. E.** Use of a single carbon fibre working electrode for potentiometric stripping analysis, 276.
Jimoh, W. L. O. *See* **Singh, K.**
Johnson, P. *See* **Newton, D.**
Jons, O. *See* **Andersen, J. R.**
Joslin, M. *See* **Belchamber, R. M.**

K

Kadhum, K. H. *See* **Alsaadi, B. M.**
Karlinski, T. *See* **Dugdale, O.**
Keattch, C. J. The evolution of the analytical applications of thermogravimetry, 270.
Kerr, A., **Stevenson, B. J.**, and **Young, C. A.** A data acquisition unit designed for molecular weight determination by vapour pressure osmometry, 303.
Kerr, D. N. S. *See* **Pinchin, M. J.**
Kettrup, A., **Klusmeier, W.**, and **Ohrbach, K. H.** DTA - DTG - MS investigation of coal, 271.
Key, P. *See* **Massey, R. C.**
Kinns, M. *See* **Broad, L. A.**
Kirkbright, G. F. *See* **Adshead, A.**; **Barnett, N. W.**; *Cope, M. J.*
Kiss, E. E. *See* **Putanov, P. S.**
Klaas, E. *See* **Haldna, U.**
Klusmeier, W. *See* **Kettrup, A.**
Kolarov, I. A. *See* **Petrovic, S. M.**
Komolafe, O. O. Liquid chromatographic assay of some anthraquinone glycosides, 308.
Kosta, L., and **Franko, M.** Mineralization of biological materials for elemental trace analysis, 271.

Kowalski, W. J. The determination of trace elements in ores by means of X-ray spectrometry, 323.

Kratochvil, B. *See* **Al-Daher, I. M.**

Kulauzov, M. *See* **Oluski, A.**

Kuidvere, A. Present status of preservative methods for mercury in solution: a review, 297.

L

Lagesson, V. Background reduction in determination of lead, cadmium, chromium and nickel in blood and urine by graphite furnace atomic absorption spectrometry, 297.
Lagesson-Andrasko, L. Development of analytical chemistry since World War II, 303.
Laker, M. Trace elements in hair, 322.
Lally, A. E. *See* **Newton, D.**
Laserna, J. J. *See* **Garcia Sanchez, F.**
Lau, C. M., **Ure, A. M.**, and **West, T. S.** Atom-trapping atomic-absorption spectrometry for the analysis of agricultural and environmental materials, 284.
Lauko, A. *See* **Gorog, S.**
Lavi, N. *See* **Alfassi, Z. B.**
Lazaro Boza, F. *See* **Valcarcel, M.**
Leonard, M. A. *See* **Asea, P. E. A.**
Lichtig, J., **Morozin Zaia, D. A.**, and **Serra Valente, J. P.** Biampereometric determination of traces of atmospheric sulphur dioxide, 320.
 — and **Rezende, M. O. O.** The determination of traces of nitrite in natural waters by a biampereometric standard addition method and by polarography, 290.
Lilley, T. *See* **Belchamber, R. M.**
Lingeman, H., **Hulshoff, A.**, **Loriaux, B.**, **Renema, J.**, **Underberg, W. J. M.**, and **de Vet, H. A.** Two derivatization methods for the fluorimetric detection of carboxylic acids prior to reversed-phase HPLC separation, 306.
Lippmann, Ch. *See* **Neidhart, B.**
Littlejohn, D. *See* **Marshall, J.**; **Ottaway, J. M.**
Livermore, S. *See* **Massey, R. C.**
Livesey, N. T. *See* **Cresser, M. S.**
Lockhart, J. C. Pockets and propellers. Some kinetic and thermodynamic discoveries in the solution chemistry of ionophores, 274.
Lomic, S. M., and **Milic, B. Ij.** ESR spectral study of free radical formation in amino acid pyrolysates, 322.
Lopez de Haddad, M. P., and **Newbery, J. E.** Determination of nitrite in meat products, 318.
Loriaux, B. *See* **Lingeman, H.**

Lovell, M. A., and Farmer, J. G. The determination of arsenic species in water and human urine by ion-exchange chromatography-hydride generation atomic-absorption spectrometry, 274.

Lukaszewski, Z., and Ciszewski, A. Determination of thallium(I) in the presence of large excess of lead(II) by differential pulse anodic-stripping voltammetry using "electrochemical masking," 316.

Lund, U. *See* Helboe, P.

Luque de Castro, M. D. *See* Valcacer, M.

M

Macdonald, A. M. G., and Wu, Guo-Ping. Automated flow-injection diffusion method for the spectrophotometric determination of fluoride, 313.

Machlan, L. A. *See* Moody, J. R.

MacKenzie, S. L. Gas - liquid chromatography of amino acids using a nitrogen-specific detector, 269.

Macrae, R. *See* Nicolson, I. A.; Trugo, L. C.

Mahmood, M. B. H. *See* Habboush, A. E.

Marais, P. J. J. G., Schwarzer, S., and Hack, C. An investigation into the use of an emulsification technique for the analysis of war metals in used lubricating oils, 283.

Marinkovic-Neduncic, R. P. *See* Putanov, P. S.

Marquez Gonzalez, M. L. *See* Gomez Ariza, J. L.

Marshall, J., Bamiro, F. O., Littlejohn, D., and Ottawa, J. M. Determination of copper in serum by inductively coupled plasma and direct current plasma emission spectrometry, 285.

— *See* Ottawa, J. M.

Martin, E. C. A study of the conditions of formation of Ni^{2+} and dimethylglyoxime water-soluble complexes, 311.

Martin, M. J. *See* Fogg, A. G.

Martinez, C. *See* Castillo, J. R.

Martinez Calatayud, J., and Fagoaga Caridad, P. Polarographic behaviour of phenyl biguanide, 315.

Martinez-Izquierdo, M. E., Durand-Alegria, J. S., and Cabrera-Martin, A. Spectrophotometric and spectrofluorimetric study on Rose Bengal B and its reaction with Pt(IV), 311.

Masoud, M. S., and El-Dissouky, A. The use of 2,4-dinitrosoresorcinol as a microanalytical reagent for the determination of platinum(IV), 303.

Massey, R. C., Livermore, S., Key, P., and McWeeny, D. J. Methods of analysis for nitrosamines in food and beverages, 308.

Matheson, W. *See* Duff, K. M.

McCaffrey, J. T. *See* Michel, R. G.

McDonald, L. *See* Cooksey, B. G.

McLeod, C. W., Worsfold, P. J., and Cox, A. G. Rapid analysis of complex samples using flow injection and ICP - AES, 286.

McWeeny, D. J. *See* Crews, H. M.; Massey, R. C.

Melios, C., Mota, M. H. A., Torres, V. R., Tognoli, J. O., and Molina, M. Binary systems involving metal ions and benzylideneypyruvates: equilibria in aqueous solution, 301.

— and Molinari, R. Ion exchange spectrophotometric method for measuring pyruvate in biological fluids, 321.

Michel, R. G., and McCaffrey, J. T. Carbon furnace sample introduction for the metastable nitrogen plasma, 287.

Michiels, E., and Gijbels, R. Fingerprint spectra in laser microprobe mass analysis of titanium oxides of different stoichiometry, 294.

Milic, B. Ij., and Piletic, M. V. GC - MS determination of *N*-substituted amides in the thermal reaction of amino acids and triglycerides, 307.

— *See* Lomic, S. M.

Miller, J. N., Tyson, J. F., and Wilmott, N. J. Metal ions as labels in immunoassay, 263.

— *See* Fell, A. F.

Miller, R. M. *See* Adshead, A.

Mills, C. F. *See* Crofton, R. W.

Mitchell, F. L. Clinical applications of mass spectrometry, 282.

Moffat, A. C. Newer analytical techniques applicable to clinical chemistry, 279.

Mohammad, H. J. *See* Rahim, S. A.

Molina, M. *See* Melios, C.

Molinari, R. *See* Melios, C.

Montana Gonzales, M. T. *See* Gomez Ariza, J. L.

Moody, G. J. *See* Alexander, P. H. V.; Bateson, S. W.; Hutchings, M. J.

Moody, J. R., Machlan, L. A., and Gramlich, J. W. Characterization of uranium standard reference materials for absolute isotopic abundance, 288.

Moreno, A. *See* Bendito, D. P.

Morgan, J. E. *See* Jennings, V. J.

Morozin Zaia, D. A. *See* Lichtig, J.

Mota, M. H. A. *See* Melios, C.

Mumuni, A. R., and Peacock, C. J. Techniques to reduce interferences in hydride generation atomic-absorption spectrophotometry, 297.

Murtagh, D. *See* Bateson, S. W.

Murty, K. V. S. S., Rao, K. E., and Sastry, Ch. S. Some new analytical aspects using hydrogen peroxide and peroxidase, 300.

N

Nagels, J. J., Parmentier, F., Creten, W. L., and Vanpeperstraete, P. M. Ultraviolet, fluorescence and electrochemical detectors in the analysis of complex biological media: a statistical comparison, 293.

Nasser, T. A. K. Candoluminescence spectroscopy: a flame technique for trace element analysis, 309.

Navas, A. See *Garcia Sanchez, F.*

Navas, M. J. See *Asuero, A. G.*

Needleman, M. See *Farthing, R. H.*

Nehmam, J. See *Pinchin, M. J.*

Neidhart, B., Lippmann, Ch., Baumhoer, G., and Deutschmann, P. Plasma catecholamine analysis by RP-HPLC separation and chemical reaction detection, 292.

— See *Dungs, K.*

Nerin, C. See *Cacho, J.*

Neuberger, C. See *Jackson, C. J.*

Newberry, J. E. See *Lopez de Haddad, M. P.*

Newton, D., Johnson, P., Lally, A. E., Pentreath, R. J., and Swift, D. J. The uptake by man of cadmium present in crab meat, 262.

Nicolson, I. A., and Macrae, R. The use of high-performance liquid chromatography for the determination of ascorbic acid and thiamine in foods—a collaborative study, 269.

Nincakova, A. Study of complex equilibria of Cu(II) ions with some aliphatic amines, 302.

Nord, L. See *Danielsson, L. G.*

Norris, T. See *Broad, L. A.*

O

Odinets, V. See *Haldna, U.*

Ohrbach, K. H. See *Kettrup, A.*

Olsen, H. See *Berg, H.*

Olszki, A., Todorovic, M., Pecic, J., Stanojevic, S., and Kulauzov, M. Influence of different chemical agents on biochemical reactions of *B. cereus* and *B. subtilis* spores isolated from foods, 323.

O'Neill, P. See *Haswell, S. J.*

Ottaway, J. M., Littlejohn, D., and Marshall, J. Constant temperature electrothermal atomisation, 286.

—, Black, M. M., Fell, G. S., Giri, S. K., Littlejohn, D., and Sthapit, P. R. Recent developments in atomic-spectrometric methods for the determination of cadmium in biological materials, 283.

— See *Cooksey, B. G.; Marshall, J.*

P

Parmentier, F. See *Nagels, J. J.*

Pastor, T., and Cirec, I. Coulometric cerimetric determination in acetic acid in the presence of perchlorate ions, 316.

—, Antonijevic, M., and Dobricic, M. Titrations with standard solutions of manganese(III) and manganese(IV) in the presence of polarised electrodes, 316.

Pattie, D. M. G. See *Fell, A. F.*

Paulus, G. See *Verbueken, A.*

Pauluzzi, E. See *Baldini, P. L.*

Pastore, T. C. M. See *de Lima, C. G.*

Payrovan, H. See *Gharib, A.*

Peacock, C. J. See *Mumuni, A. R.*

Pecic, J. See *Olszki, A.*

Pedersen, E. See *Berg, H.*

Pentreath, R. J. See *Newton, D.*

Petrovic, S. M., and Kolarov, Lj. A. Solvent selection in liquid - solid chromatography of steroids, 308.

Pfaffli, P. Determination of acid anhydrides in air samples, 319.

Pijpers, F. W. Failures and successes with pattern recognition for solving problems in analytical chemistry, 277.

Pihlajamaki, S. V. An ellipsometric study of the adsorption of xanthate on copper(I) sulphide, 315.

Piletic, M. V. See *Milic, B. Lj.*

Pinchin, M. J., Kerr, D. N. S., and Nehmam, J.

Determination of cadmium and lead in blood of haemodialysis patients by anodic stripping voltammetry, 290.

Pivnichny, J. V. Separation and determination of the two components of glycerol formal by high-performance liquid chromatography, 292.

Plunkett, A. O. See *Bowen, D. V.*

Pons, B. S. See *Chatten, L. G.*

Porto, R. See *Bottari, E.*

Preston, T., Robertson, I., and East, B. W. Simultaneous measurement of body protein and protein turnover in humans and animals, 321.

Price, C. P. Novel enzymatic assays and their application in clinical biochemistry, 279.

Prudnikov, E. D. Universal atomiser for atomic spectrometry, 299.

— and *Shapkina, Yu. S.* Random errors of analytical determinations, 299.

Putanov, P. S., Kiss, E. E., Marinkovic-Neducin, R. P., Zupkov, R. M., and Boskovic, G. C. Thermal analysis and X-ray diffraction as complementary methods in heterogeneous catalyst investigations, 291.

R

Raashid, M. See *Abdennabi, A. M. S.*

Rahim, S. A., and Mohammad, H. J. Novel methods for the determination of aluminium and fluoride: application to some tap and natural waters, 321.

Rahimi, H. *See Gharib, A.*

Rao, K. E. *See Murty, K. V. S. S.*

Ratcliffe, J. G. Immunoassay and its application in clinical chemistry, 279.

Redant, G., and Culkin, H. Packed *versus* capillary chromatography: is it really worth the trouble? 309.

Renema, J. *See Lingeman, H.*

Rezende, M. O. O. *See Lichtig, J.*

Ripson, P. A. M., and de Galan, L. Analytical performance of externally-cooled ICP torches, 284.

Roberts, D. J. Detoxification of organochlorine compounds, 320.

Robertson, I. *See Preston, T.*

Roehrig, Ph., Wolff, C. M., and Schwing, J. P. Regeneration and recycling of coenzyme NAD and enzymes in the flow injection determination of glucose with glucose dehydrogenase, 321.

Romero, F. Study of metallic elements distribution in soil - plant systems by multivariate statistical analyses, 324.

Rosenberg, C. Thermal degradation products of polyurethanes, 267.

Rosset, R. An analytical study of pyrophosphate chemistry by computer-assisted methods, 277.

Ruzicka, J., and Hansen, E. H. Flow injection analysis reviewed, 264.
— *See Hansen, E. H.*

Rzadkiewicz, A. *See Adshead, A.*

S

Sabbatini, L., Desimoni, E., and Zambonin, P. G. XPS characterization of electrode surfaces: a powerful aid for elucidating electrochemical mechanisms, 275.

Said, E. Z. *See Al-Sammerrai, D.*

Sampson, B., and Fleck, A. A modified method for the determination of plasma pyridoxal phosphate, 322.
— and —. Measurement of aluminium in dialysis fluid and water by a colorimetric procedure, 322.

Sanke Gowda, H., and Thimme Gowda, A. Spectrophotometric determination of vanadium(V) and its application to vanadium steels containing chromium, molybdenum, manganese, copper and nickel, 311.

Sastry, Ch. S. *See Murty, K. V. S. S.*

Savickas, P. J. *See Harrison, W. W.*

Schmuckler, G. *See Hershcovitz, H.*

Schulz, J. *See Berg, H.*

Schulze, G., and Frenzel, W. A simple flow system for potentiometric stripping analysis, 317.

Schwarzer, S. *See Marais, P. J. J. G.*

Schwing, J. P. *See Roehrig, Ph.*

Sedgwick, R. D. *See Broad, L. A.*

Seeber, R., and Stefan, S. Accuracy of explicit finite difference methods in the simulation of electroanalytical responses, 315.

Serra Valente, J. P. *See Lichtig, J.*

Shapkina, Yu. S. *See Prudnikov, E. D.*

Sharp, B. L. *See Duff, K. M.*

Shaw, C. J., and Cantle, J. E. Trace element analysis using a glow discharge source mass spectrometer, 295.

Shepherd, J. The ultracentrifuge in clinical chemistry, 279.

Sherman, L. R., Bilgicer, K., and Shiner, S. A. The distribution of inorganic and organic tin compounds in normal and malignant organs, 272.

Shiner, S. A. *See Sherman, L. R.*

Sibbald, A. *See Covington, A. K.*

Silva, M. *See Bendito, D. P.*

Singh, K., Essiet, E. U., and Jimoh, W. L. O. Chemical analysis of Saharan dust collected in the northern states of Kano and Kaduna in Nigeria, 323.

Sithamparanadarajah, R. *See Thompson, J. M.*

Skett, P. W. *See Bowen, D. V.*

Smith, P. The Public Analyst in land reclamation, 263.

Smith, P. *See Greenfield, S.*

Smith, R. M. Drug identification using infrared spectroscopy and an Apple II computer, 312.
— Quantitative comparison of reversed-phase HPLC columns, 292.
— and Witowska, B. A. The use of retention indices in the HPLC analysis of spices, 305.

Southway, C. *See Hitchman, M. L.*

Spillane, D. E. M. *See Adshead, A.*

Squirrell, D. *See Greenfield, S.*

Staab, R. A. *See Grime, J. K.*

Stanojevic, S. *See Oluski, A.*

Starks, T. H., Fang, J. H., and Zevin, L. S. A new standardless method of quantitative X-ray phase analysis, 324.

Stefani, S. *See Seeber, R.*

Stephens, R., and Haapakka, K. A study on the applicability of an electrostatic pre-concentration technique for plasma emission spectroscopy, 296.

Stevenson, B. J. *See Kerr, A.*

Sthapit, P. R. *See Ottaway, J. M.*

S
Stratis, J. A., Anthemidis, A. N., and Vasilikiotis, G. S. Solvent extraction and spectrophotometric determination of palladium(II) with 2,2'-dipyridyl-2-pyridylhydrazone (DPPH). Determination of palladium in dental alloys, 310.
Sulaiman, S. T. Differential-pulse polarographic determination of traces of nitrite via the diazotisation of sulphanilic and orthanilic acids, 317.
Summan, A. M. *See* Fogg, A. G.
Swenters, K. *See* Verlinden, J.
Swift, D. J. *See* Newton, D.
Swindall, W. J., and Thorburn Burns, D. Modifications to the flow system and sample introduction time of the Carlo Erba 1106 elemental analyser, 313.
Szabo, A. A sample storage and application method in the TLC analysis of unstable compounds, 293.

T
Talkop, R. *See* Haldna, U.
Taobi, A. *See* Cope, M. J.
Taylor, A. F. *See* Betteridge, D.
Taylor, C. G. *See* Aspinall, J. E.
Taylor, G. M. Some aspects of the use of HRGC in the pharmaceutical industry, 268.
Tcholakova, I. F., and Dimitrov, M. A. Investigation of the co-precipitation of aluminium with Fe_3O_4 obtained by precipitating iron as formate from homogeneous solution, 300.
Teale, P. *See* Houghton, E.
Terry, J. M. *See* Thompson, J. M.
Thimme Gowda, A. *See* Sanke Gowda, H.
Thomas, J. D. R. *See* Alexander, P. H. V.; Bateson, S. W.; Hutchings, M. J.
Thompson, J. M., Sithamparanadarajah, R., Hartmann, E., and Terry, J. M. Thermal desorption of personal monitors, 261.
Thorburn Burns, D., and Harriott, M. Influence of the electrothermal tube atomiser surface on the AAS responses of generated covalent metal hydrides, 300.
— *See* Swindall, W. J.
Thorpe, J. *See* Bowen, D. V.
Todorovic, M. *See* Oluski, A.
Tognoli, J. O. *See* Melios, C.
Torres, V. R. *See* Melios, C.
Townshend, A. *See* Baker, S. J.; El-Hag, I.; Faizullah, A. T.; Turner, P. J.
Trillo, J. L. *See* Asuero, A. G.
Trinajstic, N. *See* Bosnjak, N.
Trugo, L. C., and Macrae, R. Determination of chlorogenic acid isomers in coffee products by high-performance liquid chromatography, 291.

Turner, P. J., and Townshend, A. Determination of phosphorus by automated molecular emission cavity analysis (MECA), 260.
Tusek-Znidaric, M. *See* Byrne, A. R.
Tyler, A. N. *See* Broad, L. A.
Tyson, J. F. A critical look at calibration procedures for flame atomic absorption spectrometry, 283.
— Education and Training News, 326.
— and Appleton, J. M. H. Flow injection calibration methods for flame atomic absorption spectrometry, 260.
— *See* Miller, J. N.

U

Uden, P. C. Recent applications of plasma emission spectroscopic detection for chromatography, 284.
Underberg, W. J. M. *See* Lingeman, H.
Ure, A. M. *See* Lau, C. M.

V

Valcarcel, M., Luque de Castro, M. D., and Lazaro Boza, F. Catalytic fluorimetric determination of copper at the $ng\ ml^{-1}$ level by flow injection analysis, 313.
—, Gomez-Hens, A., and Cejas, M. A. Fluorimetric determination of titanium, zirconium and hafnium and their mixtures based on ternary complex formation, 325.
— *See* Bendito, D. P.
van der Houwen, O. A. G. J., Hulshoff, A., and Indemans, A. W. M. Retention mechanisms of water-soluble corticosteroids in reversed-phase chromatography, 307.
van der Linden, W. E. The application of gas diffusion in FIA, 265.
van de Vijver, F. *See* Verbueken, A.
Van Grieken, R. *See* Verbueken, A.
Vanpeperstraete, P. M. *See* Nagels, J. J.
van Puymbroeck, J. *See* Viczian, M.
Vasilikiotis, G. S. *See* Stratis, J. A.
Vazquez Ruiz, J., Garcia De Torres, A., and Cano-Pavon, J. M. Fluorescence properties of Schiff bases derived from 3-hydroxypyridine-2-aldehyde and their metal chelates. Fluorimetric determination of manganese based on their catalytic effects on the oxidation of these compounds with hydrogen peroxide, 325.
Vendelbo, K. *See* Berth, N.
Verbueken, A., Paulus, G., van de Vijver, F., Verpoorten, G., Van Grieken, R., and de Broe, M. Laser microprobe mass analysis of biological material: standardization and application in nephrotoxicology studies, 287.

Verlinden, J., Swenters, K., and Gijbels, R. Modification in the surface composition of sparked electrodes, and its relation to relative sensitivity factors in spark source mass spectrometry, 288.
Verpooten, G. *See* Verbueken, A.
Viczian, M., van Puymbroeck, J., Gijbels, R., and Cornides, I. Time-resolved measurements in spark source mass spectrometry, 289.
Vrebov, B. *See* Helsen, J. A.

W

Wade, A. P. *See* Betteridge, D.
Walkden, P. J. *See* Hitchman, M. L.
Wang, W. N., Chen, Y. J., and Wu, M. T. Complementary analytical methods in ion chromatography, 293.
Wardall, G. The influence of injection systems on the development and acceptance of capillary gas chromatography, 268.
Watson, C. *See* Greenfield, S.
Watt, D. E. *See* Al-Kenani, A. T.
Wernery, J. D. *See* Grime, J. K.
West, N. G., and Withers, E. X-ray spectrometry applied to the determination of gaseous contaminants in work-place air, 266.
West, T. S. *See* Lau, C. M.
Westwell, A. *See* Greenfield, S.
Wheatley, A. R. *See* Faizullah, A. T.
Wheeler, W. B. *See* Bardalaye, P. C.

Williams, D. R. Speciation and bioavailability, 262.
Williams, M. H. *See* Fell, A. F.
Wilmott, N. J. *See* Miller, J. N.
Wilson, J. J. The Analytical Methods Committee, 326.
— *See* Greenfield, S.
Withers, E. *See* West, N. G.
Witowska, B. A. *See* Smith, R. M.
Wolff, C. M. *See* Roehrig, Ph.
Wood, D. G. M. *See* Belchamber, R. M.
Worsfold, P. A fully automated flow injection analysis system for the study of immunological interactions, 265.
— *See* McLeod, C. W.
Wu, G. P. *See* Macdonald, A. M. G.
Wu, M. T. *See* Wang, W. N.

Y

Ylinen, P. *See* Hiltunen, L.
Young, C. A. *See* Kerr, A.

Z

Zambianchi, E. M. *See* Buldini, P. L.
Zambonin, P. G. *See* Sabbatini, L.
Zander, A. *See* Dugdale, O.
Zang, L. X. *See* Cope, M. J.
Zevin, L. S. *See* Starks, T. H.
Zupkov, R. M. *See* Putanov, P. S.

SUBJECT INDEX

A

Acrylonitrile - acrylamide copolymers: Studies of the degradation of —. Coleman and Gordon III, 572.

Additives: Applications of X-ray fluorescence spectroscopy in the petroleum industry in relation to petroleum products and —. Purdue, 467.

Alkalinity: A microcomputer-controlled — titration—methods and results. Wilson, 460.

Amines: Electrochemical detection of — and other compounds of pharmacological and neurochemical interest. Marsden, Macdonald, Brazell and Maidment, 559.

Amperometry: Amperometric and related determinations with immobilised enzymes and micro-organisms. Karube and Suzuki, 556.

Analytical chemistry today: analytical chemists tomorrow. Thomas, 101.

— Trust Fund, 199, 453.

Inorganic and — in the "A" level syllabus. Thorburn Burns, 377.

Investigation into the use of low-cost robots to support chemical analysis. Pierce, Huddleston and Diamond, 419.

Analytical Division: 11th A.G.M., 160.

A message from the President of the Division. Greenfield, 223.

Atomic Spectroscopy Group: 18th A.G.M., 162.

Automatic Methods Group: 17th A.G.M., 194.

Biological Methods Group: 38th A.G.M., 162.

Chromatography and Electrophoresis Group: 18th A.G.M., 194.

Distinguished Service Award conferred on C. A. Johnson, 89, 196, 350.

East Anglia Region: 15th A.G.M., 161.

Education and Training Group: 12th A.G.M., 163.

Electroanalytical Group: 13th A.G.M., 194.

Joint Pharmaceutical Analysis Group: 13th A.G.M., 194.

Microchemical Methods Group: 39th A.G.M., 161.

Midlands Region: 28th A.G.M., 194.

New members of Council: 395, 454.

North East Region: 17th A.G.M., 341.

Northern Ireland Region: 2nd A.G.M., 161.

North West Region: 58th A.G.M., 194.

Particle Size Analysis Group: 17th A.G.M., 162.

Radiochemical Methods Group: 16th A.G.M., 162.

Analytical Division—continued

Scottish Region. 48th A.G.M., 341.

South East Region. 8th A.G.M., 342.

Special Techniques Group. 38th A.G.M., 342.

13th Theophilus Redwood lecturer R. L. Williams, 89.

Thermal Methods Group. 18th A.G.M., 162.

Western Region. 28th A.G.M., 341.

Analytical general practice:

Some unusual and difficult samples in —. Simpson, 381.

Analytical work:

Organisation and reporting of —. Usher, 24.

Animal feeds: Animal feed evaluation by use of near infrared reflectance (NIR) spectrometer. Murray and Hall, 75.

Anionic surfactants: Interference with calcium ion-selective electrodes by —: studies of membrane parameters. Frend, Moody, Thomas and Birch, 122.

Antineoplastic drugs: Detection systems for assay of antineoplastic platinum complexes. Sternson, Marsh, Bannister and Repta, 366.

Archaeo-organic residues: Analysis of —. Robins, 379.

Arsenic in the biosphere: an illustrated discussion of risk assessment. Peterson, 399.

Asbestos: Aspects of optical microscopy related to the — industry. Griffiths, 410.

Automated — counting using a Magiscan image analyser. Kenny, 61.

Atomic-absorption spectrometry: *See Spectrometry, atomic-absorption.*

Atomic-emission spectrometry: *See Spectrometry, atomic-emission.*

Atom trapping: atomic-absorption spectrometry. Lau, Ure and West, 114.

Atracurium besylate: Some aspects of the analysis and stability of —. Carthy and Hill, 177.

Attenuated total reflectance: In-stream analyser for the measurement of trace water in petroleum products. Mitchell, 464.

Auger electron spectroscopy: *See Spectroscopy, Auger electron.*

Automatic techniques: An automated GC - MS assay for salbutamol in plasma. Tanner, Martin and Oxford, 38.

Automated headspace gas chromatography. House, 423.

Automated sample processing. Tranter, 425.

Automatic analyser for the determination of quinizarin in hydrocarbon oils. Honeybone, 462.

Automatic sample preparation and its role in process control. Hawickhorst, 431.

Automatic techniques—continued

Automation of physico-chemical methods in a pharmaceutical analytical laboratory. Cobb, 369.

Dissolution by automatic sequential sampling and analysis. Walker, 429.

Flow injection analysis. Worsfold, 486.

In-stream analyser for the measurement of trace water in petroleum products. Mitchell, 464.

Microcomputer-controlled system for automating and improving accuracy and precision in the gas-chromatographic analysis of gases. Wybrow, DeRose, Cowper and Greenhow, 102.

Sample preparation for continuous flow analysis—some examples and future developments. Mace, 427.

The application of — for laboratory and process control. Long, 35.

Use of robots in automated sample preparation systems. Parkin, 422.

Autotitrator: A versatile — using the PET microcomputer. Chipperfield, Roscoe and Webster, 127.

B

Bacteria, sulphate-reducing: Ion-selective electrode determination of sulphide produced by sulphate-reducing bacteria. Al-Hitti, Moody and Thomas, 119.

Baking: See also Bread-making.

Applications of NIR in the — industry. Osborne, 79.

Bioanalytical studies: Quantitative gas chromatography - mass spectrometry for —.askell, 350.

Biological method: Radioreceptor binding assay—a new — for the determination of drugs in body fluids. Ratnaraj, Goldberg and Lascelles, 169.

Biological sensors: Amperometric and related determinations with immobilised enzymes and micro-organisms. Karube and Suzuki, 556.

Biosensors and their uses in flow injection systems. Thompson, Krull and Bendell-Young, 568.

Immobilised biological and immuno sensors. Guilbault, 550.

Biosphere: Arsenic in the —: an illustrated discussion of risk assessment. Peterson, 399.

Blood: Determination of lead in —, urine and water by flame atomic-fluorescence spectrometry. Sthapit, Ottaway and Fell, 599.

Blood plasma: An automated GC - MS assay for salbutamol in plasma. Tanner, Martin and Oxford, 38.

Body fluids: Radioreceptor binding assay—a new biological method for the determination of drugs in —. Ratnaraj, Goldberg and Lascelles, 169.

Bread-making: See also Baking.

Applications of near infrared reflectance analysis in breeding wheats for — quality. Starr, Smith, Blackman and Gill, 72.

British Standards: 90, 501.

Bryant, F. J.: Obituary. Shalgovsky, 197.

C

Cadmium: Model for — toxicity. Black, Ottaway, Fell and Aughey, 592.

Calcium: Interference with — ion-selective electrodes by anionic surfactants: studies of membrane parameters. Frend, Moody, Thomas and Birch, 122.

Calibrated volumetric glassware: Edmond. (Correspondence), 216.

Cannabis: Successive generation studies on —. Taylor, 546.

Carbonyl compounds: The use of catalytic thermometric titrimetry in an investigation of the mechanism and applications of condensation and rearrangement reactions of mono- and difunctional —. Marrero-Ardila and Greenhow, 130.

Catalysts: Automated X-ray fluorescence spectroscopic analysis of metals, — and other grindable solids in the energy industry. Purdie, 433.

Catalytic potentiometry: Catalytic micro-determination of the copper content in herbage. Kennedy and Svehla, 117.

Catalytic thermometric titrimetry: The use of — in an investigation of the mechanism and applications of condensation and rearrangement reactions of mono- and difunctional carbonyl compounds. Marrero-Ardila and Greenhow, 130.

Cement: Particle size aspects of — technology. Blezard, 529.

Chemiluminescence: Flow injection analysis. Worsfold, 486.

Immunoassays using — labelled antibodies. Weeks and Woodhead, 416.

Chirnside, R. C.: Obituary. Cluley, 349.

Chromatography as an analytical tool for the occupational hygienist. Brown, 399.

Chromatographic analysis of hazardous impurities in pesticides. Bottomley, 401.

Chromatography Discussion Group, 398.

Chromatography, gas - liquid: *See also Gas chromatography - mass spectrometry.*

Automated headspace gas chromatography. House, 423.

Characterisation and comparison of illicit heroin by gas chromatography and high-performance liquid chromatography. Law, Joyce, Bal, Goddard, Japp and Humphreys, 611.

Microcomputer-controlled system for automating and improving accuracy and precision in the gas-chromatographic analysis of gases. Wybrow, DeRose, Cowper and Greenhow, 102.

Pyrolysis - gas chromatography for polymer analysis and characterisation and for studying thermal degradation mechanisms. Lehrlé, 574.

The use of HRGC in water quality control. Whittle, 400.

Chromatography, high-performance liquid:

Application of high-performance liquid chromatography to the analysis of marine systems. Preston, 455.

Characterisation and comparison of illicit heroin by gas chromatography and high-performance liquid chromatography. Law, Joyce, Bal, Goddard, Japp and Humphreys, 611.

Combined high-performance liquid chromatography - mass spectrometry. Games, 352.

Determination of trace metals by high-performance liquid chromatographic separation and spectrophotometric detection. Hobbs, Jones and Ebdon, 613.

Experiences in high-performance liquid chromatography. Dale, 200.

High-performance liquid chromatography method development by microcomputer using linear and simplex optimisation. Berridge, 29.

Chromatography, high-performance size exclusion: Pharmaceutical application of high-performance size exclusion chromatography. Davidson, 171.

Chromatography, high-performance thin-layer: Derivative transformation of spectrophotodensitometric profiles in high-performance thin-layer chromatography. Gelpi, Traveset, Such and Gonzalo, 362.

Chromatography, ion: Comparative study of some ion detectors for use in flowing liquid streams. Al-Jorani and Lyle, 111.

Chromatography, liquid: Computer-aided optical multi-channel detectors in liquid chromatography. Fell, 356.

Chromatography, liquid—continued

Detection in reversed-phase liquid chromatography by use of ion-pairing probes. Schill, 359.

New look at reversed-phase packing materials for liquid chromatography. Batham and Simpson, 618.

On-line enrichment for enhanced sensitivity in liquid chromatography. Brinkman, 364.

Selective detection in liquid chromatography through post-column derivatisation and fluorescence monitoring. Brinkman and Frei, 354.

Cigarette tar prediction: The application of automatic techniques for laboratory and process control. Long, 35.

Clinical analysis: Data handling and network analysis in the automated clinical laboratory. McLelland, 27.

Ion-selective electrodes in — and medicine. Ladenson, 554.

Sensitive and high resolution analytical techniques in —. Kricka, 163.

Coal mine atmospheres: Application of electrochemical sensors in the monitoring of —. Criddle and Crook, 53.

Coffee astringency. Clifford and Ohiokpehai, 83.

Colour monitoring in drains and rivers. Clarke, 56.

Computer-aided optical multi-channel spectroscopy: Computer-aided optical multi-channel detectors in liquid chromatography. Fell, 356.

Pharmaceutical applications of —. Fell, Scott, Gill and Moffat, 173.

Condensation reactions: The use of catalytic thermometric titrimetry in an investigation of the mechanism and applications of condensation and rearrangement reactions of mono- and difunctional carbonyl compounds. Marrero-Ardila and Greenhow, 130.

Contaminants: Water supply and analysis of —— the impact of the EEC. Richards, 14.

Continuous flow analysis: Sample preparation for —— some examples and future developments. Mace, 427.

Cool flame emission spectra: Silicon-intensified target camera as a detector for —. El Hag and Townshend, 135.

Copolymers: Analysis of the chemical microstructure of — by high-resolution nuclear magnetic resonance spectroscopy. Cais, Komatan and Salzman, 579.

Studies of the degradation of acrylonitrile - acrylamide —. Coleman and Gordon III, 572.

Copper: Analytical aspects of —— binding by humic substances in reservoir sediments. Tovar-Grau, Graham and Hayes, 125.

Catalytic micro-determination of the —— content in herbage. Kennedy and Svehla, 117.

Correspondence: 216.

Crop radiometry. Curran, 517.

Development of a spectrometer for monitoring crop reflectance. Birnie and Adams, 519.

Physical and physiological interpretation of infrared to red spectral ratios over crops. Steven, 527.

D

Data handling and network analysis in the automated clinical laboratory. McLelland, 27.

Organisation and reporting of analytical work. Usher, 24.

Data use: Analytical aspects of water pollution control. Pugh, 17.

Depth profiling analysis of practical surfaces. Keenlyside, Stott and Wood, 482.

Derivative transformation of spectrophotodensitometric profiles in high-performance thin-layer chromatography. Gelpi, Traveset, Such and Gonzalo, 362.

Detection in reversed-phase liquid chromatography by use of ion-pairing probes. Schill, 359.

— systems for assay of antineoplastic platinum complexes. Sternson, Marsh, Bannister and Repta, 366.

Computer-aided optical multi-channel detectors in liquid chromatography. Fell, 356.

N,N-Diethyl-p-phenylenediamine: Studies on the determination of sulphide using ——. Babbiker and Dalziel, 609.

Digital electronics: Teaching analytical chemistry students —— and microprocessor fundamentals. Gifford, 514.

Dissolution by automatic sequential sampling and analysis. Walker, 429.

Distinguished Service Award: Conferred on C. A. Johnson, 89, 196, 350.

Drains: Colour monitoring in —— and rivers. Clarke, 56.

Drug - diet mixtures: Some considerations of the analytical aspects of —— used in toxicology studies. Stavrou, 202.

Drugs: *See also Pharmaceuticals.*

Control of impurities in isoniazid tablets. Carr and Fish, 181.

Drugs—continued

Radioreceptor binding assay—a new biological method for the determination of —— in body fluids. Ratnaraj, Goldberg and Lascelles, 169.

Some aspects of the analysis and stability of atracurium besylate. Carthy and Hill, 177.

Stability of pralidoxime mesylate injections. May and Pearse, 179.

Dysprosium: Automated spectrofluorimetric determinations of terbium and —— in rare earth mixtures. Lyle and Zatar, 616.

E

Edinburgh—a brief history. Best, 226.

270 years of chemistry at ——. Doyle, 233. University of ——, 1583–1983. Footman and McIntyre, 229.

Editorial: 1, 101, 159, 193, 224.

EEC: Environmental protection and European Community legislation. Lummis, 21.

Water supply and analysis of contaminants—the impact of the ——. Richards, 14.

Electrochemical methods: Electrochemical approaches to metal speciation. Florence, 552.

Electrochemical detection of amines and other compounds of pharmacological and neurochemical interest. Marsden, Macdonald, Brazell and Maidment, 559.

Flow analysis with electrochemical detection. Pungor and Tóth, 562.

Electrochemical sensors: Application of —— in the monitoring of coal mine atmospheres. Criddle and Crook, 53.

The changing scene in electrochemical analysis. Thomas, 565.

Electrodes: Immobilised biological and immuno sensors. Guilbault, 550.

Electrothermal atomisation: Comparison of —— methods for molybdenum. Wan Ngah, Sarkissian and Tyson, 597.

Emission spectrometry: *See Spectrometry, emission.*

Enhanced sensitivity: On-line enrichment for —— in liquid chromatography. Brinkman, 364.

Environment: Environmental protection and European Community legislation. Lummis, 21.

Enzymatic assays: Amperometric and related determinations with immobilised enzymes and micro-organisms. Karube and Suzuki, 556.

Flow injection analysis. Worsfold, 486.

Enzyme-based sensors: The changing scene in electrochemical analysis. Thomas, 565.

Enzyme-linked immunosorbent assay: Aspects of —. Hitchcock and Crimes, 413.

Equipment news: 41, 86, 137, 185, 212, 382, 440, 491, 533, 583, 623.

Erratum: 137.

Errors: Automated sample processing. Tranter, 425.

Euroanalysis IV: invited lectures book, 545.

European analysis: Community Bureau of Reference, 343.

European Analytical Column 6. Federation of European Chemical Societies Working Party on Analytical Chemistry, 344.

External integrating sphere: The — — a novel tool for surface colour measurement. Rowe, 205.

G

Gas chromatography - mass spectrometry: An automated GC - MS assay for salbutamol in plasma. Tanner, Martin and Oxford, 38.

Gas chromatography - high resolution mass spectrometry in analyses of hormonal and anti-hormonal drugs. Gaskell, Daniel and Nicholson, 34.

Quantitative — for bioanalytical studies. Gaskell, 350.

Gas - liquid chromatography: See **Chromatography, gas - liquid.**

Genetics: Successive generation studies on cannabis. Taylor, 546.

Gold Medal: Awarded to G. F. Kirkbright, 89, 195.

Good laboratory practice: Some considerations of the analytical aspects of drug - diet mixtures used in toxicology studies. Stavrou, 202.

Graphical representation of spectroscopic data: Smith, 32.

F

Fast atom bombardment mass spectrometry: Static secondary ion mass spectrometry (SIMS) and — (FABMS) for surface analysis. Vickerman, 482.

Fibre counting: Automated asbestos counting using a Magiscan image analyser. Kenny, 61.

Fire in the laboratory: 4.

Firearms discharge residues determination: Detection of firearms discharge residues. McQuillan, 548.

Flow injection analysis: Worsfold, 486.

Biosensors and their uses in flow injection systems. Thompson, Krull and Bendell-Young, 568.

Computer assisted optimisation of chemical systems, in particular —. Wade, 108.

Flow analysis with electrochemical detection. Pungor and Tóth, 562.

Flow injection methods and atomic-absorption spectrophotometry. Tyson, 488.

Optimisation of — and polarography by the modified simplex method. Wade, 523.

Fluorescence monitoring: Selective detection in liquid chromatography through post-column derivatisation and —. Brinkman and Frei, 354.

Fluorescence spectrometry: See **Spectrometry, fluorescence.**

Food: Legal and scientific control of —. Shenton, 6.

Forensic science: Radioimmunoassay in —. Smith, 417.

H

Hazards and nuisances from waste disposal operations: Kingsbury, 8.

Chromatographic analysis of hazardous impurities in pesticides. Bottomley, 401.

Headspace analysis: Automated headspace gas chromatography. House, 423.

Herbage: Catalytic micro-determination of the copper content in —. Kennedy and Svehla, 117.

Heroin: Characterisation and comparison of illicit — by gas chromatography and high-performance liquid chromatography. Law, Joyce, Bal, Goddard, Japp and Humphreys, 611.

High-performance liquid chromatography: See **Chromatography, high-performance liquid.**

High-performance thin-layer chromatography: See **Chromatography, high-performance thin-layer.**

High resolution analytical techniques: Sensitive and — in clinical chemistry. Kricka, 163.

High resolution gas chromatography: The use of — in water quality control. Whittle, 400.

Hormonal and anti-hormonal drugs: Gas chromatography - high resolution mass spectrometry in analyses of —. Gaskell, Daniel and Nicholson, 34.

Humic substances: Analytical aspects of copper binding by — in reservoir sediments. Tovar-Grau, Graham and Hayes, 125.

Hydride generation: Preliminary investigations with a commercial —/ICP - OES system. Rose, 436.

Hydrocarbon oils: *See also Petroleum.*

Automatic analyser for the determination of quinizarin in —. Honeybone, 462.

I

Immunoassays using chemiluminescence labelled antibodies. Weeks and Woodhead, 416.

Aspects of ELISA. Hitchcock and Crimes, 413.

Polarisation fluoroimmunoassay for LSD. Hubbard, Miller, Law, Mason and Moffat, 606.

Immuno sensors: Immobilised biological and —. Guilbault, 550.

Impurities: Control of — in isoniazid tablets. Carr and Fish, 181.

Inductively coupled plasmas: Emission spectrometric analysis of lubricating oil. Mason, 471.

Investigation of compromise conditions for inductively coupled plasma emission spectrometry. Bamiro, Littlejohn, Marshall and Ottaway, 602.

Preliminary investigations with a commercial hydride generation/ICP - OES system. Rose, 436.

Infrared spectrometry: *See Spectrometry, infrared.*

Injections: Stability of pralidoxime mesylate —. May and Pearse, 179.

Inorganic chemistry: Inorganic and analytical chemistry in the "A" level syllabus. Thorburn Burns, 377.

Inorganic oxy-salts: X-ray photoelectron spectroscopic study of ion-induced decomposition in —. Christie, Sutherland, Lee and Walls, 480.

Ion chromatography: *See Chromatography, ion.*

Ion detectors: Comparative study of some — for use in flowing liquid streams. Al-Jorani and Lyle, 111.

Ion-induced decomposition: X-ray photoelectron spectroscopic study of — in inorganic oxy-salts. Christie, Sutherland, Lee and Walls, 480.

Ionising radiations regulations: The —, 347.

Ion-pairing probes: Detection in reversed-phase liquid chromatography by use of —. Schill, 359.

Ion-selective electrode determination of sulphide produced by sulphate-reducing bacteria. Al-Hitti, Moody and Thomas, 119.

Ion-selective electrode—*continued*

— in clinical chemistry and medicine. Ladenson, 554.

Interference with calcium — by anionic surfactants: studies of membrane parameters. Frend, Moody, Thomas and Birch, 122.

Isocyanates: Determination of — using a paper tape monitor. Nutt, 63.

Isoniazid tablets: Control of impurities in —. Carr and Fish, 181.

IUPAC: Secretary-General of —, 545.

L

Laboratory '83 exhibition: 326.

Landfill: Hazards and nuisances from waste disposal operations. Kingsbury, 8.

Problems of leachate from domestic waste tips. Robinson, 11.

Law: Legal and scientific control of food. Shenton, 6.

Lead: Determination of — in blood, urine and water by flame atomic-fluorescence spectrometry. Staphit, Ottaway and Fell, 599.

Linear optimisation: High-performance liquid chromatography method development by microcomputer using linear and simplex optimisation. Berridge, 29.

Liquid chromatography: *See Chromatography, liquid.*

Lone working: 215.

LSD: Polarisation fluoroimmunoassay for —. Hubbard, Miller, Law, Mason and Moffat, 606.

Lubricating oil: Emission spectrometric analysis of —. Mason, 471.

Luminescence: Sensitive and high resolution analytical techniques in clinical chemistry. Kricka, 163.

Luminescence spectroscopy: *See Spectroscopy, luminescence.*

M

Magiscan image analyser: Automated asbestos counting using a —. Kenny, 61.

Marine systems: Application of high-performance liquid chromatography to the analysis of —. Preston, 455.

Membranes: Interference with calcium ion-selective electrodes by anionic surfactants: studies of membrane parameters. Frend, Moody, Thomas and Birch, 122.

Metals: Automated X-ray fluorescence spectroscopic analysis of —, catalysts and other grindable solids in the energy industry. Purdue, 433.

Metal sorption mechanism: Mechanism of metal sorption from aqueous potassium thiocyanate by polyether type polyurethane foam. Moody, Thomas and Yarmo, 132.

Metal speciation: Electrochemical approaches to —. Florence, 552.

Microbial sensors: The changing scene in electrochemical analysis. Thomas, 565.

Microcomputers: A microcomputer-controlled alkalinity titration—methods and results. Wilson, 460.

Automation of physico-chemical methods in a pharmaceutical analytical laboratory. Cobb, 369.

A versatile autotitrator using the PET microcomputer. Chipperfield, Roscoe and Webster, 127.

Computer assisted optimisation of chemical systems, in particular flow injection analysis. Wade, 108.

Graphical representation of spectroscopic data. Smith, 32.

High-performance liquid chromatography method development by microcomputer using linear and simplex optimisation. Berridge, 29.

Microcomputer-controlled system for automating and improving accuracy and precision in the gas-chromatographic analysis of gases. Wybrow, DeRose, Cowper and Greenhow, 102.

Microcomputing: a consumer's view of training requirements. Porter, 511.

On-site training and purchasing microcomputer systems. Evans-Terlecki, 516.

Teaching analytical chemistry students digital electronics and microprocessor fundamentals. Gifford, 514.

Micro-determination: Catalytic — of the copper content in herbage. Kennedy and Svehla, 117.

Microscopy: Detection of firearms discharge residues. McQuillan, 548.

Microscopy handbooks: 626.

Microstructure analysis: Analysis of the chemical microstructure of copolymers by high-resolution nuclear magnetic resonance spectroscopy. Cais, Kometani and Salzman, 579.

Miller, J. N.: Biography, 234.

Modelling: Model for cadmium toxicity. Black, Ottaway, Fell and Aughey, 592.

Molybdenum: Comparison of electrothermal atomisation methods for —. Wan Ngah, Sarkissian and Tyson, 597.

Multi-element analysis. Ottaway. (Editorial), 193.

N

Near infrared spectrometry or spectroscopy: *See Spectrometry, near infrared.*

Network analysis: Data handling and — in the automated clinical laboratory. McLelland, 27.

Neuropeptides: Electrochemical detection of amines and other compounds of pharmacological and neurochemical interest. Marsden, Macdonald, Brazell and Maidment, 559.

Nickel alloys: Determination of ultra-trace elements in — using atomic spectrometric methods and solid samples. Headridge, 207.

Non-destructive analysis: Analysis of archaeo-organic residues. Robins, 379.

Novotny, M. V.: Biography, 235.

Nuclear magnetic resonance spectroscopy: *See Spectroscopy, high-resolution nuclear magnetic resonance.*

Nuclear microprobe: Application of tomographic techniques to two-dimensional surface analysis using the Harwell —. Huddleston, Hutchinson and Pierce, 476.

O

Obituaries: 139, 197, 349.

Occupational hygienist: Chromatography as an analytical tool for the —. Brown, 399.

O'Haver, T. C.: Biography, 236.

Oil spills: The application of luminescence techniques to the analysis of —. Soutar, 19.

On-line enrichment for enhanced sensitivity in liquid chromatography. Brinkman, 364.

Optical emission spectrometry: *See Spectrometry, optical emission.*

Optical microscopy: Aspects of — related to the asbestos industry. Griffiths, 410.

Use of the microscope in a consultancy laboratory. Simpson, 409.

Optimisation: Computer assisted — of chemical systems, in particular flow injection analysis. Wade, 108.

Organotin compounds: Determination of — in waterways and seaways. Chapman, 210.

P

Paper presentation: Getting the message across—why bother? A guide to how not to present your paper at SAC 83. Tyson, 159.

Paper tape monitor: Determination of isocyanates using a —. Nutt, 63.

Particle size aspects of cement technology. Blezard, 529.

Pesticides: Chromatographic analysis of hazardous impurities in —. Bottomley, 401.

Petroleum: *See also* **Hydrocarbon oils.**

Applications of X-ray fluorescence spectroscopy in the — industry in relation to — products and additives. Purdue, 467.

In-stream analyser for the measurement of trace water in — products. Mitchell, 464.

Pharmaceutical analyst: Training of the —: discussion of the necessary training and routes to the "qualified person" status. Thorburn Burns, 405.

Pharmaceuticals: *See also* **Drugs.**

Automation of physico-chemical methods in a pharmaceutical analytical laboratory. Cobb, 369.

Pharmaceutical application of high-performance size exclusion chromatography. Davidson, 171.

Pharmaceutical applications of computer-aided optical multi-channel spectroscopy. Fell, Scott, Gill and Moffat, 173.

Plasma etching: AES and XPS studies of polymer films formed during the — of silicon oxide layers. Davies, Tuppen, Heckingbottom, Gill and Heslop, 478.

Platinum complexes: Detection systems for assay of antineoplastic platinum complexes. Sternson, Marsh, Bannister and Repta, 366.

Polarisation fluoroimmunoassay for LSD. Hubbard, Miller, Law, Mason and Moffat, 606.

Polarography: Optimisation of flow injection analysis and — by the modified simplex method. Wade, 523.

Pollution: Analytical aspects of water — control. Pugh, 17.

Polymer films: AES and XPS studies of — formed during the plasma etching of silicon oxide layers. Davies, Tuppen, Heckingbottom, Gill and Heslop, 478.

Polymers: Application of Raman spectroscopy to the analysis of —. Gerrard, 569.

Pyrolysis - gas chromatography for polymer analysis and characterisation and for studying thermal degradation mechanisms. Lehrie, 574.

Studies of the degradation of acrylonitrile - acrylamide copolymers. Coleman and Gordon III, 572.

Thermal volatilisation analysis of —. McNeill, 576.

Polyurethane foam: Mechanism of metal sorption from aqueous potassium thiocyanate by polyether type —. Moody, Thomas and Yarmo, 132.

Post-column derivatisation: Selective detection in liquid chromatography through — and fluorescence monitoring. Brinkman and Frei, 354.

Potassium thiocyanate: Mechanism of metal sorption from aqueous — by polyether type polyurethane foam. Moody, Thomas and Yarmo, 132.

Pralidoxime mesylate: Stability of — injections. May and Pearse, 179.

Process control: Automatic sample preparation and its role in —. Hawickhorst, 431.

The application of automatic techniques for laboratory and —. Long, 35.

Professorships for analytical chemists: 92.

Propylene carbonate: Role of —, a non-inert solvent, in the extraction of the tetrathiocyanatocobaltate(II) ion. Thorburn Burns and Kheawpintong, 595.

Publications received: 90, 153, 217, 391, 444, 500, 540, 627.

Publicity: Honorary Publicity Secretary's column. Tyson, 2, 342.

Pyrolysis - gas chromatography for polymer analysis and characterisation and for studying thermal degradation mechanisms. Lehrie, 574.

Q

Quinizarin: Automatic analyser for the determination of — in hydrocarbon oils. Honeybone, 462.

R

Radioimmunoassay in forensic science. Smith, 417.

Radioreceptor binding assay—a new biological method for the determination of drugs in body fluids. Ratnaraj, Goldberg and Lascelles, 169.

Raman spectroscopy; *See* **Spectroscopy, Raman.**

Rearrangement reactions: The use of catalytic thermometric titrimetry in an investigation of the mechanism and applications of condensation and — of mono- and difunctional carbonyl compounds. Marrero-Ardila and Greenhow, 130.

Reflectance: Crop radiometry. Curran, 517.

Reflectance spectrocomputer: Animal feed evaluation by use of near infrared reflectance (NIR) spectrocomputer. Murray and Hall, 75.

Reflectance spectroscopy: Application of near infrared — to tobacco analysis. Long, 69. Applications of near infrared reflectance analysis in breeding wheats for breadmaking quality. Starr, Smith, Blackman and Gill, 72. Development of a spectrometer for monitoring crop reflectance. Birnie and Adams, 519.

Reservoir sediments: Analytical aspects of copper binding by humic substances in —. Tovar-Grau, Graham and Hayes, 125.

Reversed-phase liquid chromatography: Detection in — by use of ion-pairing probes. Schill, 359. New look at reversed-phase packing materials for liquid chromatography. Batham and Simpson, 618.

Rivers: Colour monitoring in drains and —. Clarke, 56.

Robots: Investigation into the use of low-cost — to support chemical analysis. Pierce, Huddleston and Diamond, 419.

Use of — in automated sample preparation systems. Parkin, 422.

Royal Society of Chemistry awards: 390, 499, 538.

S

SAC 83: 1, 45, 93, 141, 159, 187, 223-340, 507, 509, 591. *N.b.:* Pages 223-340 were entirely devoted to the SAC 83 conference. For an index to the scientific contributions, see Name Index (pp. viii-xviii).

Ottaway. (Editorial), 224.

Retrospective view of —. Thorburn Burns, 509.

Safety: Fire in the laboratory, 4.

Lone working, 215.

The ionising radiations regulations, 347.

Salbutamol: An automated GC - MS assay for — in plasma. Tanner, Martin and Oxford, 38.

Sample preparation for continuous flow analysis — some examples and future developments. Mace, 427.

Automated sample processing. Tranter, 425.

Automatic — and its role in process control. Hawickhorst, 431.

Schools lectures: SAC 83 —. Whitley, 591.

Secondary ion mass spectrometry: Static — (SIMS) and fast atom bombardment mass spectrometry (FABMS) for surface analysis. Vickerman, 482.

Selective detection in liquid chromatography through post-column derivatisation and fluorescence monitoring. Brinkman and Frei, 354.

Sensitive analytical techniques: Sensitive and high resolution analytical techniques in clinical chemistry. Kricka, 163.

Sequential sampling: Dissolution by automatic — and analysis. Walker, 429.

Silicon-intensified target camera as a detector for cool flame emission spectra. El Hag and Townshend, 135.

Silicon oxide layers: AES and XPS studies of polymer films formed during the plasma etching of —. Davies, Tuppen, Heckingbottom, Gill and Heslop, 478.

Silver Medal: Awarded to R. F. Browner, 3.

Simon, W.: Biography, 237.

Simplex optimisation: High-performance liquid chromatography method development by microcomputer using linear and —. Berridge, 29.

Optimisation of flow injection analysis and polarography by the modified simplex method. Wade, 523.

Society for Analytical Chemistry: *See also SAC 83.*

Gold medal awarded to G. F. Kirkbright, 89, 195.

SAC research studentships—the first decade. Townshend, 453.

Silver Medal awarded to R. F. Browner, 3.

Solid samples: Determination of ultra-trace elements in nickel alloys using atomic spectrometric methods and —. Headridge, 207.

Spectrometry: Development of a spectrometer for monitoring crop reflectance. Birnie and Adams, 519.

Determination of trace metals by high-performance liquid chromatographic separation and spectrophotometric detection. Hobbs, Jones and Ebdon, 613.

Spectrometry, atomic-absorption: Atom trapping atomic-absorption spectrometry. Lau, Ure and West, 114.

Comparison of electrothermal atomisation methods for molybdenum. Wan Ngah, Sar-kissian and Tyson, 597.

Determination of ultra-trace elements in nickel alloys using atomic spectrometric methods and solid samples. Headridge, 207.

Flow injection methods and atomic-absorption spectrophotometry. Tyson, 488.

Spectrometry, atomic-emission: Determination of ultra-trace elements in nickel alloys using atomic spectrometric methods and solid samples. Headridge, 207.

Spectrometry, emission: Emission spectrometric analysis of lubricating oil. Mason, 471.

Spectrometry, flame atomic-fluorescence: Determination of lead in blood, urine and water by flame atomic-fluorescence spectrometry. Sthapit, Ottaway and Fell, 599.

Spectrometry, fluorescence: Automated spectrofluorimetric determinations of terbium and dysprosium in rare earth mixtures. Lyle and Za'tar, 616.

Spectrometry, infrared: Physical and physiological interpretation of infrared to red spectral ratios over crops. Steven, 527.

Spectrometry, mass: *See also* Gas chromatography - mass spectrometry. Combined high-performance liquid chromatography - mass spectrometry. Games, 352.

Static secondary ion mass spectrometry (SIMS) and fast atom bombardment mass spectrometry (FABMS) for surface analysis. Vickerman, 482.

Spectrometry, near infrared: Animal feed evaluation by use of near infrared reflectance (NIR) spectocomputer. Murray and Hall, 75.

Application of near infrared reflectance spectroscopy to tobacco analysis. Long, 69.

Applications of near infrared reflectance analysis in breeding wheats for bread-making quality. Starr, Smith, Blackman and Gill, 72.

Applications of NIR in the baking industry. Osborne, 79.

NIR: past, present and future. Cowe, 65.

The application of automatic techniques for laboratory and process control. Long, 35.

Spectrometry, optical emission: Investigation of compromise conditions for inductively coupled plasma emission spectrometry. Bamiro, Littlejohn, Marshall and Ottaway, 602.

Preliminary investigations with a commercial hydride generation/ICP - OES system. Rose, 436.

Spectrometry, ultraviolet - visible: The external integrating sphere—a novel tool for surface colour measurement. Rowe, 205.

Spectrometry, X-ray fluorescence: Applications of X-ray fluorescence spectroscopy in the petroleum industry in relation to petroleum products and additives. Purdue, 467.

Automated X-ray fluorescence spectroscopic analysis of metals, catalysts and other grindable solids in the energy industry. Purdue, 433.

Spectrophotodensitometric profiles: Derivative transformation of — in high-performance thin-layer chromatography. Gelpi, Traveset, Such and Gonzalo, 362.

Spectroscopy: First biennial national atomic — symposium. Snook, 51.

Graphical representation of spectroscopic data. Smith, 32.

Spectroscopy, Auger electron: AES and XPS studies of polymer films formed during the plasma etching of silicon oxide layers. Davies, Tuppen, Heckingbottom, Gill and Heslop, 478.

Spectroscopy, high-resolution nuclear magnetic resonance: Analysis of the chemical microstructure of copolymers by high-resolution nuclear magnetic resonance spectroscopy. Cais, Kometani and Salzman, 579.

Spectroscopy, luminescence: The application of luminescence techniques to the analysis of oil spills. Soutar, 19.

Spectroscopy, optical multi-channel: Pharmaceutical applications of computer-aided optical multi-channel spectroscopy. Fell, Scott, Gill and Moffat, 173.

Spectroscopy, Raman: Application of Raman spectroscopy to the analysis of polymers. Gerrard, 569.

Spectroscopy, X-ray photoelectron: AES and XPS studies of polymer films formed during the plasma etching of silicon oxide layers. Davies, Tuppen, Heckingbottom, Gill and Heslop, 478.

X-ray photoelectron spectroscopic study of ion-induced decomposition in inorganic oxy-salts. Christie, Sutherland, Lee and Walls, 480.

Stability: of pralidoxime mesylate injections. May and Pearse, 179.

Some aspects of the analysis and — of atracurium besylate. Carthy and Hill, 177.

Standards: Water supply and analysis of contaminants—the impact of the EEC. Richards, 14.

Sulphide: Ion-selective electrode determination of — produced by sulphate-reducing bacteria. Al-Hitti, Moody and Thomas, 119.

Studies on the determination of sulphide using *N,N*-diethyl-*p*-phenylenediamine. Babiker and Dalziel, 609.

Surface analysis: Depth profiling analysis of —. Keenlyside, Stott and Wood, 482.

Static secondary ion mass spectrometry (SIMS) and fast atom bombardment mass spectrometry (FABMS) for —. Vickerman, 482.

Surface colour: The external integrating sphere—a novel tool for — measurement. Rowe, 205.

T

Technical oral presentations: what happens to them? Lyon and Roberts, 374.

Terbium: Automated spectrofluorimetric determinations of — and dysprosium in rare earth mixtures. Lyle and Za'tar, 616.

Tetrathiocyanatocobaltate(II) extraction: Role of propylene carbonate, a non-inert solvent, in the extraction of the tetrathiocyanatocobaltate(II) ion. Thorburn Burns and Kheawpintong, 595.

Thermal degradation: Pyrolysis - gas chromatography for polymer analysis and characterisation and for studying — mechanisms. Lehrle, 574.

Studies of the degradation of acrylonitrile - acrylamide copolymers. Coleman and Gordon III, 572.

Thermal volatilisation analysis of polymers. McNeill, 576.

Thin-layer activation in the measurement of engine wear. Evans, 474.

Tip leachate: Problems of leachate from domestic waste tips. Robinson, 11.

Tobacco: Application of near infrared reflectance spectroscopy to — analysis. Long, 69.

Tomography: Application of tomographic techniques to two-dimensional surface analysis using the Harwell nuclear microprobe. Huddleston, Hutchinson and Pierce, 476.

Toxicology: Some considerations of the analytical aspects of drug - diet mixtures used in — studies. Stavrou, 202.

Trace analysis: Flow injection analysis. Worsfold, 486.

Trace metal speciation in sea water. van den Berg, 458.

Determination of trace metals by high-performance liquid chromatographic separation and spectrophotometric detection. Hobbs, Jones and Ebdon, 613.

Training of the pharmaceutical analyst: discussion of the necessary training and routes to the "qualified person" status. Thorburn Burns, 405.

Microcomputers: a consumer's view of requirements. Porter, 511.

On-site — and purchasing microcomputer systems. Evans-Terlecki, 516.

Teaching analytical chemistry students digital electronics and microprocessor fundamentals. Gifford, 514.

Two-dimensional surface analysis: Application of tomographic techniques to — using the Harwell nuclear microprobe. Huddleston, Hutchinson and Pierce, 476.

U

Ultra-trace elements: Determination of — in nickel alloys using atomic spectrometric methods and solid samples. Headridge, 207.

Ultraviolet - visible spectrometry: *See Spectrometry, ultraviolet - visible.*

Urine: Determination of lead in blood, — and water by flame atomic-fluorescence spectrometry. Sthapit, Ottaway and Fell, 599.

V

Vidicon: Silicon-intensified target camera as a detector for cool flame emission spectra. El Hag and Townshend, 135.

W

Waste disposal: Hazards and nuisances from — operations. Kingsbury, 8.

Problems of leachate from domestic waste tips. Robinson, 11.

Water supply and analysis of contaminants—the impact of the EEC. Richards, 14.

A microcomputer-controlled alkalinity titration—methods and results. Wilson, 460.

Analytical aspects of copper binding by humic substances in reservoir sediments. Tovar-Grau, Graham and Hayes, 125.

Analytical aspects of — pollution control. Pugh, 17.

Colour monitoring in drains and rivers. Clarke, 56.

Determination of lead in blood, urine and — by flame atomic-fluorescence spectrometry. Sthapit, Ottaway and Fell, 599.

Electrochemical approaches to metal speciation. Florence, 552.

In-stream analyser for the measurement of trace — in petroleum products. Mitchell, 464.

The use of HRGC in — quality control. Whittle, 400.

Trace metal speciation in sea —. van den Berg, 458.

Waterways and seaways: Determination of organotin compounds in —. Chapman, 210.

Wear: Thin-layer activation in the measurement of engine —. Evans, 474.

Wheat: Applications of near infrared reflectance analysis in breeding wheats for bread-making quality. Starr, Smith, Blackman and Gill, 72.

Williams, K. A.: Obituary. Hamence, 139.

X

X-ray fluorescence spectrometry: See Spectrometry, X-ray fluorescence.

X-ray photoelectron spectroscopy: See Spectroscopy, X-ray photoelectron.

